PROCEEDINGS

OF THE

FIFTH ANNUAL MEETING

OF THE

FLORIDA STATE HORTICULTURAL SOCIETY,

HELD AT

ORMOND, FLORIDA,

MAY 3rd, 4th and 5th, 1892.

Published by the Society.

THE

FLORIDA STATE HORTICULTURAL SOCIETY

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FIFTH ANNUAL MEETING

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At Ormond, Tuesday, Wednesday and Thursday,

May 3, 4 and 5, 1892.

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FIRST VICE-PRESIDENT - Theodore L. Mead, Oviedo.

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Committee on Figs.-M.W. MORSMAN, Switzerland; A.H. BROWN, Belleview; E. HUMLEY, Keuka.

Committee on Kaki and Loquat.-L.W. LIPSEY, Citra; R.H. PORTER, Leesburg; E. W. WINTER, Zellwood.

Committee on Fertilizers.- W.H.MANN, Mannville; R.W. PIERCE, Indian Springs; DR. J.M. HAWKS, Hawk's Park.

Committee on Peaches and Plums.-C.L. TABER, Glen St.Mary; C.P. LUND, Daytona; CHAS.PUGSLEY, Manville.

Committee on Strawberries and Miscellaneous Fruits.- JAS. MOTT, Orlando; DR. A.W. MOODY, Ocala; C.E. SPENCER, Pasadena.

Committee on Marketing.-E. BEAN, Jacksonville; F.G. SAMPSON, Boardman; E.O. PAINTER, Deland.

Committee on Citrus,and Consideration of Implement Exhibit.-A.L. DUNCAN, Dunedin; A.H. CRANE, Nashua; C.M. CROSBY, Avon Park.

Committee on Native Fruits.-C.A. BACON, Ormond; ELIZABETH W. VARNUM, Fort Gates; F.W.PRICE, Orlando.

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Committee on Ornamentals.-T.L. MEAD, Oviedo; LETITIA V. WATKINS, Lake Helen; GEO.F. SMITH, Daytona



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| Wilson, Geo. W., | Ocala, " |
| White, James, H., | Georgiana " |
| Wilson, J. I., | Hains City, " |
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| Warner, S. C., | Palatka (Esperanza) " |
| Wilson, Robert A., | Deland and Lexington, Mo. |
| Westlake, J. Willis, | Lake Helen, " |
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| Young, J. B., | Hains City, Florida. |



236 members this year

# OFFICIAL SCALE AND RULES OF THE FLORIDA STATE HORTICULTURAL SOCIETY FOR JUDGING CITRUS FRUITS.

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| Scale. | Points. |
|---|---|
| Size, 2½ to 3¼ inches | 10 |
| Appearance, skin fancy and silky | 10 |
| Juiciness, must sink in water | 10 |
| Thickness of Peel, 3/32 inch | 10 |
| Seedless, one point off for 2 seeds | 10 |
| Sweetness | 15 |
| Acid | 15 |
| Tissue | 10 |
| Bouquet | 10 |

## RULES.

1. The executive committee of the Florida Horticultural Society shall choose a superintendent of exhibition and three judges, with a substitute and a secretary. The executive committee, including ex officio members and competing exhibitors, shall not be eligible as superintendent and judges. The three judges shall conduct the tests, and their decision shall be final.

2. The deliberation of these judges shall be secret. The superintendent of exhibition, on application of the chairman of judges, shall from time to time supply the judges with specimens for judgment, and shall use diligence to secure them from intrusion.

3. Each exhibitor is expected to be present with and in charge of his own exhibit. His selections for entries, when ready, must be formally turned over to the superintendent of exhibits, who will then enter by name and number in a book of record, and furnish him a duplicate card to accompany each entry. Entries will be delivered to the judges in

the order of their reception and entry by the superintendent. Responsibility for musty fruit shall rest with the exhibitor, but poor specimens can be replaced or entries withdrawn by consent of the superintendent, before fruit is delivered to the judges. If an exhibitor is unable to be present, he can make a written statement to the superintendent of exhibits as to his fruit and entries, and the superintendent can make selections if necessary.

4. Diplomas or cash premiums, at the disposal of the society, shall be divided into classes, 1st, 2d, 3d, 4th, in ratios of merit as to premiums of 4, 3, 2, 1, to make the decimal 10, for collections, and with 1st and 2d with ratios of 3 and 2 for single plate premiums. Seven specimens shall constitute a plate to entitle to entry, and two of these specimens must be delivered to the judges, who will examine both and score the best. These scores will be eligible both for single plate and collection premiums. The judges reserve the right to debar unworthy or bogus specimens.

5. The judges shall use the amended scale giving ten points each to the following scores and standards of perfection. (1) size 2½ to 3½ inches, diameter; (2) appearance - specimen must be fancy and skin silky; (3) for juiciness it must sink below the surface of water, emergence the size of a silver dollar to count 9, one-half the bulk, zero; (4) thickness of peel 3-32 of an inch for 3 inches in diameter, and one point off for each additional 1-32 inch; (5) two seeds to count one point off and two rudiments as one seed; (6) absence of tissue, membranes to be very tender and core porous, 1/8 to 1/4 in. diameter, as to size of fruit; qualities of flavor, acid, 15, sweetness, 15, and bouquet 10; to be judged by taste. Specimens of varieties excelling in balance and richness of flavor to be used as standards for reference. Lemons and limes to count 20 for acid and 20 for flavor.

6. These rules must be published with premium list, and after the judges have made the awards with the superintendent of exhibits, they shall deliver the entry book and scores to the executive committee, and will receive their discharge.

Average Characteristic Properties and Qualities of the best known Varieties of Citrus Fruit as reported by the Judges at the Society's First Exhibition at Ocala, under the Old Scale.

| | Total | Size | Appearance | Juiciness | Peel | Absence of Seed | Absence of Pulp | Sweetness | Sub-acid | Absence of Fresh'd | Vinous Flavour |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Acapulco | 85½ | 10 | 9½ | 9 | 9½ | 6 | 8½ | 7 | 10 | 10 | 6 |
| Beach No. 1 | 90½ | 10 | 9½ | 9½ | 9½ | 6 | 9 | 9½ | 9 | 10 | 8½ |
| Beach No. 5 | 84½ | 10 | 10 | 8 | 8 | 5 | 8 | 8 | 10 | 10 | 7 |
| Botelka | 83 | 10 | 5 | 9 | 9 | 4 | 8 | 9 | 10 | 10 | 9 |
| Centennial | 88 | 10 | 8½ | 9 | 8½ | 5½ | 8½ | 9 | 10 | 10 | 9 |
| Circassian | 91 | 10 | 9½ | 9 | 8½ | 8½ | 8½ | 8½ | 10 | 10 | 8½ |
| Double Imperial | 94 | 10 | 8½ | 9½ | 9 | 10 | 10 | 9 | 10 | 10 | 8 |
| Dummitt | 87 | 10 | 10 | 8 | 8 | 5 | 8½ | 8½ | 10 | 10 | 8 |
| Dulcissema | 88½ | 10 | 10 | 9 | 9 | 7 | 8½ | 7 | 10 | 10 | 6 |
| Durey | 87 | 10 | 10 | 9 | 8 | 4 | 8 | 9 | 10 | 10 | 9 |
| Durey Blood | 94 | 10 | 9 | 10 | 10 | 9 | 9½ | 8 | 10 | 10 | 8½ |
| Early Oblong | 90 | 10 | 9 | 9 | 9 | 8½ | 8½ | 9½ | 8½ | 10 | 8 |
| Homosassa | 90½ | 10 | 10 | 9½ | 9 | 4½ | 9 | 9 | 10 | 10 | 9½ |
| Jaffa | 92 | 10 | 9 | 10 | 10 | 7 | 9 | 8½ | 10 | 10 | 8½ |
| Jaffa Blood | 94 | 10 | 10 | 9 | 9½ | 9 | 9½ | 8 | 10 | 10 | 9 |
| King | 77 | 10 | 10 | 6 | 6 | 5 | 8 | 8 | 7 | 10 | 7 |
| Magnum Bonum | 90½ | 10 | 10 | 9 | 8½ | 7 | 9 | 9 | 9 | 10 | 9 |
| Majorca | 92 | 10 | 9 | 10 | 10 | 5½ | 9½ | 8½ | 10 | 10 | 9½ |
| Malta Blood | 94½ | 10 | 10 | 9½ | 9½ | 8 | 9 | 9 | 10 | 10 | 9½ |
| Malta Oval | 90½ | 10 | 10 | 9½ | 9½ | 7½ | 8½ | 7½ | 10 | 10 | 8 |
| May's | 90½ | 10 | 10 | 9½ | 9½ | 6 | 9 | 8½ | 10 | 9½ | 9 |
| Parson Brown | 87½ | 10 | 10 | 9 | 8 | 6½ | 8½ | 9½ | 8 | 10 | 8 |
| Parson's Navel | 94½ | 10 | 9 | 9½ | 10 | 8 | 10 | 9 | 10 | 9½ | 9½ |
| Pratt | | | | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Jaffa | 90½ | 10 | 10 | 9½ | 9 | 4½ | 9 | 9 | 10 | 10 | 9 | |
| Jaffa Blood | 92 | 10 | 9 | 10 | 10 | 7 | 9 | 8½ | 10 | 10 | 9½ | |
| King | 94 | 10 | 10 | 9 | 9½ | 9 | 9½ | 8 | 10 | 10 | 8½ | |
| Magnum Bonum | 77 | 10 | 10 | 6 | 6 | 5 | 6 | 8 | 7 | 10 | 9 | |
| Majorca | 90½ | 10 | 10 | 9 | 8½ | 7 | 9 | 9 | 9 | 10 | 7 | |
| Malta Blood | 92 | 10 | 9 | 10 | 10 | 5½ | 9½ | 8½ | 10 | 10 | 9 | |
| Malta Oval | 94½ | 10 | 10 | 9½ | 9½ | 8 | 9 | 9 | 10 | 10 | 9½ | |
| May's | 90½ | 10 | 10 | 9½ | 9½ | 7½ | 8½ | 7½ | 10 | 10 | 9½ | |
| Parson Brown | 90½ | 10 | 10 | 9½ | 9½ | 6 | 9 | 8½ | 10 | 9½ | 8 | |
| Parson's Navel | 87½ | 10 | 10 | 9 | 8 | 6½ | 8½ | 9½ | 8 | 10 | 9 | |
| Prata | 94½ | 10 | 9 | 9½ | 10 | 8 | 10 | 9 | 10 | 9½ | 8 | |
| Mediterranean Sweet | 89½ | 10 | 9 | 10 | 10 | 6 | 8½ | 8 | 10 | 10 | 9½ | |
| Nonpariel | 91 | 10 | 10 | 9 | 7 | 8 | 9½ | 8½ | 10 | 10 | 8 | |
| Old Vini | 89 | 10 | 10 | 9 | 8½ | 5 | 8½ | 9 | 10 | 10 | 9 | |
| Ruby | 82 | 10 | 10 | 9 | 8 | 5 | 8 | 6 | 10 | 10 | 9 | |
| St. Michael's | 86½ | 10 | 9½ | 9 | 8 | 5 | 8 | 9 | 10 | 10 | 6 | |
| St. Michael's Egg | 88 | 10 | 10 | 8½ | 8 | 5 | 8½ | 9 | 10 | 10 | 8 | |
| Mandarin | 91 | 10 | 9½ | 9 | 8 | 8½ | 9 | 9 | 10 | 10 | 9 | |
| Sweet Seville | 89 | 10 | 10 | 8½ | 8½ | 5 | 8 | 9 | 9 | 10 | 9 | |
| Tangerine | 78 | 10 | 10 | 9½ | 9 | 4 | 8½ | 10 | 10 | 10 | 10 | |
| Tardiff | 87 | 10 | 10 | 8 | 9 | 5 | 8½ | 8½ | 10 | 10 | 7 | |
| Washington Navel | 93½ | 10 | 9½ | 9 | 8½ | 10 | 8½ | 6 | 10 | 8 | 8½ | |
| | | | | | | | | 10 | 10 | 9 | 6 | |

LEMONS

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|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bellair | 92½ | 10 | 9½ | 10 | 9½ | 9 | 9½ | | 20 | | 15 | |
| Messina | 89 | 10 | 8½ | 9 | 9 | 8½ | 9 | | 19 | | 16 | |
| Sicily | 87 | 10 | 9½ | 9 | 7½ | 7 | 9 | | 18½ | | 17 | |
| Villa Franca | 93½ | 10 | 10 | 8½ | 8 | 9½ | 9½ | | 20 | | 18 | |
| Lisbon | 97½ | 10 | 10 | 10 | 10 | 9½ | 10 | | 20 | | 18 | |
| Shaddock | | | | | | | | | | | | |
| Pomelo | 64 | 10 | 9 | 8 | 8 | 1 | 7½ | 4½ | 10 | 6 | | |
| Citrus Japonica | | | | | | | | | | | | |
| Kumquat | 79½ | 10 | 10 | 10 | 7 | 7½ | 6 | 9 | 10 | | 10 | |

## A BRIEF HISTORY OF THE ORGANIZATION AND GROWTH OF THE SOCIETY.

Previous to the Annual Meeting of the Florida Nurserymen's Association in 1888, a call was issued through the horticultural Press for a meeting at the same time and place of the old Fruit Growers' Association, and such other horticulturists of the State as may feel an interest in organizing a State Horticultural Society.

The Nurserymen's Association met in the parlors of the Ocala House on April 10, 1888, at 3 P.M.

In addition to this Association there were present members of the Fruit Growers' Association and other horticulturists not connected with either organization. After the transaction of the usual routine business, the subject of organizing a State horticultural society was taken up, and it was voted unanimously to perfect such an organization. Lyman Phelps, Dudley W. Adams and J. B. Anderson were appointed a committee to draft Constitution and By-laws. The meeting adjourned to 7:30.

## FLORIDA HORTICULTURAL SOCIETY.

The meeting was called to order at 7:30 o'clock, according to adjournment, for the purpose of organizing the Florida Horticultural Society. Temporary organization was effected by election of Jas. P. DePass, Chairman, and Geo. L. Taber, Secretary. No regular meeting of the Fruit Grower's Association had been held, owing to the fact that a quorum of the executive committee was not present; but a delegation from that association participated in the organization.

Messrs. Phelps, Adams and Anderson, Committee on Constitution, submitted a constitution which was taken up, article by article, and after discussion and amendment, was adopted as follows:-

# CONSTITUTION.

ARTICLE 1. This organization shall be known as the Florida Horticultural Society, and its object shall be the advancement of Horticulture.

ART. 2. Any person may become a member of this society by signing the constitution and paying one dollar. The annual dues of members shall be one dollar.

Art. 3. Its officers shall consist of a President, three Vice-Presidents, Secretary, Corresponding Secretary, Treasurer, and Executive Committee of three, who shall be elected by ballot at each annual meeting. After the first election their terms of office shall begin on 1st day of April following their election.

ART. 4. The regular annual meeting of this society shall be held on the first Tuesday in March, except when otherwise ordered by the Executive Committee.

ART. 5. The duties of the President, Vice-Presidents, Secretary and Treasurer shall be such as usually devolve upon those officers. The President and Secretary shall be ex officio members of the executive committee.

ART. 6. The executive committee shall have authority to act for the society between annual meetings.

ART. 7. The constitution may be amended by a vote of two-thirds of the members present.

The following persons complied with the requirements of the Constitution and became members:-

Lyman Phelps, Sanford; H. L. Wheatley, Palm Springs; J. B. Anderson, San Mateo; R. D. Hoyt, Bay View; L. E. Lipsey, Citra; J. P. DePass, Archer; James Mott, Orlando; J. N. Whitner, Lake City; R. W. Pierce, Indian Springs; A. H. Manville, Jacksonville; A. Callahan, Melrose; P. W. Reasoner, Manatee; Geo. L. Taber, Glen St. Mary; Dudley W. Adams, Tangerine; I. J. Brokaw, Anthony; Rm. DuBois, Tallahassee; O. P. Rooks, Gardenia; W. J. Merrill, Gardenia.

The society next proceeded to elect officers, with the following result:-

President, Dudley W. Adams of Tangerine; Vice-Presidents, W. K. Cessna of Gainesville, E. DuBois of Tallahassee, James P. DePass of Archer; Secretary, Geo. L. Taber of Glen St. Mary; Corresponding Secretary, D. H. Elliott of Sanford; Treasurer, J. B. Anderson of San Mateo; Executive Committee, Lyman Phelps of Sanford, P. W. Reasoner of Manatee, A. H. Manville of Jacksonville.

After the organization and election of officers was finished, the infant society at once proceeded to business with the alacrity of youth and the wisdom of age.

The first work recorded on this new society is its preparations to receive and entertain the American Pomological Society, which was to meet in this State in February. How well this was done and the value of that great meeting to our State are fully recognized.

STANDING COMMITTEES.

The president was authorized to appoint the following committees, to consist of three members, each to consider and report upon the best varieties, methods of culture, etc., in different parts of the State.

Nomenclature; Citrus Fruits; Peaches and Plums; Grapes; Figs; Kaki; Apples and Pears; Tropical Fruits; Native Fruits; Flowers and Ornamentals; Ad interim; Fertilizers.

On motion, the secretary was instructed to invite the Georgia State Horticultural Society to visit us at the time of the next meeting of the American Pomological Society.

The society continued in session two days, which were pleasantly and profitably spent in laying the foundation of its future usefulness, and in discussing interesting horticultural topics. It then adjourned.

Thus was formed a State Horticultural Society that has steadily grown in numbers, influence and usefulness, till at the age of five years it is the peer of similar societies in any State in the Union.

The organizers and members of our society have a right to be proud of our short but brilliant record.

Among the first duties devolving upon us was the entertainment of the American Pomological Society, which was appointed to hold its 22d biennial session in Florida.

This foremost horticultural society of the world had never before met south of Richmond, Va. That it voted unanimously to hold its 22d session in Florida was a high compliment to Florida horticulturists, and conclusive evidence of the respect in which Florida's representatives were held by that body.

To add to the interest of this visit, our society formally invited the Georgia State Horticultural Society to meet with us and this invitation was accepted.

On Feb. 20, 1889, the three horticultural societies met in the great building of the Semi-tropical Exposition at Ocala.

The place was eminently fit. The great edifice, its contents, its arrangement and artistic decora - tions were in perfect harmony with such a gathering.

Long tables were covered with a display of citrus fruits that in extent, variety, accuracy of nomenclature and scientific interests was never equalled in the world.

The product of grove, field, garden, shop and mine vied with each other in demanding a just meed of recognition.

The fleecy staples, the venerable pumpkin, the golden maize, the "noxius weed," the booming phosphate, the soughing of the pines, the rustle of the palms, the fragrance of the roses and strains of sweetest music magnificently supplemented the great show of fruits, greeted the coming guests, and delighted the senses of sound and sight and smell.

At 11 o'clock A.M., the great throng was called to order by Hon. Prosper J. Berkmans, President of the American Pomological Society. When the strains of music had died away and the voices of the audience were hushed, prayer was offered by Rev. C. B. Wilmer, and then Dudley W. Adams, President of the Florida State Horticultural Society, thus welcomed our guests:-

Mr. President, Members of the American Pomological Society and Members of the Georgia State Horticultural Society:-

During a somewhat busy life it has been my good fortune to perform many very pleasant public duties, but among them all none ever gave me more pleasure than now, in behalf of the infant State Horticultural Society of Florida, to receive as our guests that full grown giant, the American Pomological Society.

To be thus honored by the presence of the foremost pomological society of the world would seem to fill to the brim our cup of satisfaction, but when, as to-day we can also take by the hand that stalwart organization, the State Horticultural Society of our big sister, Georgia, then, truly, our cup runneth over.

With reverence due from youth to age, with the respect due from the student to his teacher, with the affection due from the child to his parent, we bid you welcome to our State, our city, our homes, our hearts.

On account of universal and sturdy usefulness, by acclamation, the apple has been called the king of fruits. So for her sweetness in the bloom of infancy, her beauty, grace and goodness in the flush of womanly maturity, shall the orange, undisputed, wear the queenly crown.

As a loyal subject of our beautiful queen, I bid you welcome to this, her chosen realm. Here she reigns supreme, and other fruits, which in less favored climes would wear a crown, are proud to be in her retinue. Her citrus sisters, the lordly pineapple, the peach and pear and grape, the guava, banana, mango, strawberry, kaki and loquat - a horticultural aristocracy of purest blood are her most loyal and faithful subjects.

As her loyal and most humble representative, I am authorized to offer you the freedom of her dominions, and express the hope that when your duties here are done you will accept her invitation to travel all over her domain, from Ocean to Gulf, from Georgia to the Keys, without money and without price.

Come with us to our villages and our homes. Get acquainted with our sturdy live-oaks and our graceful palms. Go among our stately pines and our climbing jessamine. Take full draughts of our healing air. Take kindly warmth from our southern sun, and when you return to your own loved homes, carry with you kind memories of your short sojourn in the realm of our "Golden Queen."

The Governor, in behalf of the State, the mayor for the city, and President Wilson for the exposition, appropriately and heartily welcomed the guests.

Hon. W. C. Strong, President of the Massachusetts State Horticultural Society, suitably responded for the visitors.

The sessions of the American Pomological Society continued for three days, and we were justly proud of the part which the Florida members contributed to the papers read and the discussions following.

The visitors from a distance were surprised and pleased, not only at our horticultural exhibit, but at the wonderful capacity of our State to produce various standard and special crops.

Their estimation of our fruit exhibit is evident from the fact that the committee on awards gave silver medals (Wilder) to Lake County Shippers Union, Marion, Sumter and Lee counties, Rev. Lyman Phelps, E. H. Hart and Dudley W. Adams.

Bronze medals were awarded to Citrus, Polk and Volusia counties and to O. P. Rooks and E. S. Hubbard.

The railroads of the State offered them a free excursion for ten days and at the close of the meeting the members formed themselves into congenial parties, under competent leaders, and went to Homosassa, Citra, Tampa, Orlando, Sanford, Indian River, Mount Dora, and many other sections. No doubt that trip is still bearing good fruit.

Since then our society has had one more fruit exhibit at Ocala, under the auspices of the Semi-Tropical Exposition, and it was even more extensive, varied and instructive than the first.

We have held regular annual meetings at Orlando, DeLand and Interlachen, each one exceeding its predecessor in interest, excellence and attendance; but it was reserved for the annual meeting at Ormond to fairly outstrip all predecessors, and exceed the most ardent anticipations of its friends.

The members in attendance at this meeting, the intelligence of the personnel, the value of its papers and discussions places our society at once among the very foremost in the United States in numbers, talent and usefulness.

We have made every effort to have the legislature publish and distribute the transactions of our society for the benefit of the whole State, but so far unsuccessfully.

With proper recognition by our legislature, and constant hard work on our own part, there is no reason why this vigorous young society should not have a long career of usefulness.

PROCEEDINGS OF
THE FLORIDA STATE HORTICULTURAL SOCIETY,

- AT ITS -
FIFTH ANNUAL MEETING.

Ormond, Fla., Tuesday,
May 3d, 1892.

The fifth annual meeting of the Florida State Horticultural Society convened in the Casino of the Hotel Ormond, and was called to order at 10 o'clock A.M. by President Dudley W. Adams. The members had been coming in from North, West and South by rail, boat and team for the preceding twenty-four hours, and every train, every boat, and numerous teams continued rapidly to augment the number in attendance.

The Casino was a model room for the meeting, and as decorated by the ladies of Ormond with flowers and palms was an enchanting spot for a meeting of the Horticulturists of the State that so well deserves the name of "Florida, land of the flowers."

The fall of the President's gaval called to order the largest and best meeting the society has ever held, and this evidence of prosperity made every one in good spirits.

The meeting was formally opened by prayer by the Rev. J. W. Harding.

Mr. C. A. Bacon of Ormond, in behalf of the city, welcomed the society in the following felicitous speech:-

ADDRESS OF WELCOME BY C. A. BACON.
(EXHIBIT A.)

Mr. President and Members of the State Horticultual Society:-
The word "welcome" is inadequate to express the feelings of the people of Ormond this day;

we are proud to receive the solid men and women of our truly horticultural State; and, whereas, you might have visited us at a more auspicious time, to see us at our best, yet we are glad you are here today. The "frost king" has been abroad of late, and he is a fickle old man and snappeth his fingers here and there, like a coquettish maiden with many lovers; and we would respectfully request you to put on green glasses when visiting our groves. We well know that you will carry away an opinion of us, and we shall do our best to make that opinion a good one. If we fail, it will be no fault of the heart.

We are pleased to receive you, from the fact that you are either interested or engaged in the first great calling of man, and which must, of necessity, be the last in which he will be engaged - to till the soil and nurse the tree.

Out of the earth come all riches, through the horticulturist, farmer and miner; through them railroads are built and maintained, steamboat lines established and Atlantic cables laid. But do they receive a proper proportion of the profits of their labors? It is said a man made $1,000,000 on Wall street in three days. Did he make it? No; he simply transferred the credits from other men's books to his own. Every dollar a farmer gets he earns, but he don't get one-half the dollars he does earn.

Mr. President, perhaps it will not be out of place for me to give a few points in the history of our town, and why you find the name "Ormond" on the map. About the year 1874, a number of mechanics in the shops of the city of New Britain, Conn., becoming tired of being rung in and blown out for years, conceived the idea of going to a milder climate, where there was more room and fresher air to breathe.

They formed a colony, and sent some of their number to spy out the land. After a delightful walk of sixty miles from St. Augustine, mostly on the beach, without water or drink, they arrived

somewhat discouraged, at Mr. Bostrom's, the only settler, but one, at this point. They purchased 1,000 acres of land of "Live Oak Swift," who said, "All Florida is worth is live oaks and 'gator hides."

The next year the families came, palmetto houses were built, groves planted, roads opened, and one cut out to Volusia, on the St. John's. I say cut out. Yes, by a man on horseback, blazing trees through the flatwoods, around ponds and swamps. There was a stage line established on this road, consisting of a pair of mules and a Kentucky wagon without springs; $5 for a trunk, and from $12 to $20 for each passenger.

We well remember bringing our better-half and child over this road in a mule-cart; the hub of the wheel struck a post on the bridge, the baby tumbled out and rolled under the mule. I love that mule - he did not kick. There were no tears that night, but the heart was heavy. About this time the real estate gentleman on the St. John's got in his work.

"What, going to the east coast? Don't you do it. You can't get there, and if you do the mosquitoes, rattlesnakes and 'gators will eat you up; and if they don't get you the Indians are liable to break out any time and slaughter right and left. They did so fifty years ago; didn't you hear about it?"

A few people from all parts of the country dropped in - some hadn't money enough to get away, others dreaded the journey; some were pleased, and all have beautiful homes now. Then the Buck stage and mail line was established to St. Augustine, the driver sometimes at 12 o'clock at night camping out, using the mail-bag for a pillow, and at times, when he arrived at Ormond, found he had left the mail-bag where he slept, thirty miles away. That did not worry us, for we expected little money and few checks in those days.

Then we heard of one E. J. White over at Hollston, who had two streaks of rust pointed this way. A committee waited upon him and persuaded him that we had a good country over here. He visited wall street, found the Napoleon, E. V. White, and he having a sister at Ormond and wishing to visit her, consented to drop $200,000, and the railroad was built to the east coast.

The affrighted deer gave his note of warning, the black bear leaped over the scrub and put for cover, the natives ceased the crack of their whips, their women raised their hands in horror and exclaimed, "Them Yankee notions have come, where be our cattle and hogs? Lightwud is getting scarce; we will put for Miami."

Then up rose our Anderson, and he says to Price, "Let us build a hotel," and they said to the people of Ormond, "Build a bridge and we will see that the hotel is built." It was done. In the meantime we grew in other ways apace, and to-day we have the State Horticultural Society with us. And, Mr. President, we hand you the keys, and joyfully give the members and friends the freedom of our city.

This was responded to in behalf of the Society by Vice-president Hon. Geo. M. Wright. In his usual earnest and eloquent style he accepted the kind offices of the people of Ormond, and assured them that the members of the Florida State Horticultural Society were as glad to be here as the people were to have them, and would carry to their homes bright memories of their visit to their beautiful city.

President Adams then read his annual address.

PRESIDENT'S ADDRESS.
(EXHIBIT B.)

Gentlemen of the State Horticultural Society:-

Some years ago a dozen or so of gentlemen whose thoughts at mid-day and dreams at midnight

were of Florida horticulture, met in the parlors of the Ocala House.

There and then the Florida Horticultural Society was ushered into being. It was a diminutive infant, and its sponsors placed it in my hands to be nurtured through its first year of helplessness. I accepted the charge with many misgivings, but the infant proved to be of good stock and imbued with the right principles - and blood will tell. I have the honor and take great pride to-day in exhibiting to its sponsors and the people of Ormond my charge, now just entering on its fifth year, and I am sure you will all agree that he is a well-grown, viggrous, healthy lad of his age, who promises many years of usefulness to his native State, and to be a source of just pride to the authors of his being.

It is well that our society grows in numbers and in strength, for the work it has in view is vast, and new problems are constantly offering for its solution. The most thoughtful and scientific as well as the most practical minds in the State have united to give the whole people the benefit of their researches and practices. Much good has been done and much valuable information has gone forth through the energy of the public-spirited press, which has given liberal space to the publication of our discussions. But the State would have been largely the gainer had our legislature made provisions for distributing this store of information in the more permanent form of a bound volume. It is most sincerely hoped our next legislature will furnish means to preserve and disseminate the valuable information which is now fully available only to the comparatively few who can attend these meetings. If the result of our studies and practice could be made freely available to our whole people, we could pursue our work with renewed energy and increased efficiency. The work of our society is:-

1. How to grow fruit.

2. How to transport our fruit.

3. How to sell our fruit.

When we consider that in each and all of these things we are only on the threshold, the magnitude of our task is apparent.

The newcomer to our State is amazed and confused at the conflicting modes of practice and the conflicting advices tendered. The result is he doesn't take the advice of anyone, and resolves to experiment for himself. He then starts out on the (to him) unknown sea, and drags on the same shoals that we have dragged, strikes on the same rocks that we have struck, follows the same "false lights on the shore" that have led so many to destruction. And yet we are making substantial progress. It is a happy sign that our most thoughtful and successfully practical men are unlearning so many things that were a damage to them. A great proportion of those engaged in horticulture in Florida are men who previously had no horticultural experience at all or had engaged in that pursuit under widely different conditions.

They first entered into the business with all the blind and unreasoning enthusiasm of a new convert, and the latter adhered to his old practices with the obstinate stupidity of the religious bigot. Sometimes it has happened that those who came here without any horticultural experience at all have succeeded best, for they had the advantage of having no wrong habits to eradicate.

And right here let me say that this eradication of wrong practice and theories, many of which are venerable with age, is the most stubborn obstacle in the way of horticultural progress. The most insurmountable difficulty in the way of planting advanced ideas is the preoccupancy of the field by the old crop. It is like planting an orange grove. The heaviest part of the labor consists in clearing the ground. It takes time, labor, money and perseverance to grub up and kill the old growth that cumbers the ground. When that is accomplished it is an easy and pleasant task to introduce the improved fruit.

It is exactly so in improvement in horticultural methods. The old practices are planted thick and rooted deep. They are antiquated, but we are accustomed to them and we hesitate to lay violent hands on these venerable heritages. But the world moves, and they must go.

I can remember when the wisest and best theologians taught me that man was born totally depraved and could be saved from everlasting punishment only by certain methods of procedure. They don't teach that now. The great majority of the horticulturists of to-day seem to be possessed of the idea that a fruit tree comes into the world totally depraved in all its tendencies, and that its every impulse of growth is to grow wrong. We are taught that the tap root grows too deep and must be cut off; the top grows too high and must be headed back, too thick, and must be thinned out. We must cut it to make it vigorous, and mangle it to make it bear.

I fully believe that this doctrine of the total depravity of inanimate things must go, and that we shall learn to recognize and respect the laws of nature as revealed by the evident wishes (so to speak) of our living though inanimate companions. There is a general and well-founded belief that our fruit trees are each year more and more subject to the attack of diseases and the ravages of insects. These things do not happen so. They are so, and they are so as the legitimate effect of some cause. If we look about us at the native trees in our hammocks and pine woods, at the wild grass and wild flowers, at the luxuriant jessamines and wild grape vines, we shall find them generally in comfortable health. We shall find them holding their own (as well as they ever did) against the attack of insects. The oak bears acorns as abundantly as ever, and the wild grape vine shows no sign of failing productiveness or vigor, and yet our cultivated plants and trees have to be sprayed and irrigated to keep off the red spider, scale, rust mite and drought. Year by year the old insects get thicker and new ones appear, diseases multiply, and our diseased, insect-infected, poison-saturated, mutilated fruit trees bear mute testimony to our misteken practices.

Stop and think. All around us are wild fruit, nut and leaf-bearing trees and vines in all the luxury of primitive times. Nature, in her own unapproachable way, cultivates and irrigates and manures and prunes them. The health and vigor and long life of her plantations is palpable.

Let us take heed. Let us get our cue from nature and work in harmony with her laws. So long as we work with nature, and in accordance with her laws, our work will be easy and our reward sure.

I am fully convinced that the first cause of our trouble with insects and disease is the unnatural condition under which we grow our trees. It is a well-established fact that any tree or animal which is in an abnormal condition of lowered vitality, becomes at once subjected to the attacks of insects, fungi and diseases. The fact that our fruit trees are more attacked in this way than the native trees is positive proof that our mode of treatment has resulted in lower vitality. Our scientific and practical men have shown how to kill fungi and insects by spraying with various poisonous solutions. That is good. But it will be better if we can learn to so cultivate and feed our trees that, like the forest, they shall be able of their own strength to shake off insects and fungoid foes. Who dares to say that this cannot be done? A great many of our worst insects and fungus growths are very particular in their tastes, and a very slight change is fatal.

In one location the rust mite is at home, a hundred feet away some difference in the soil makes his existence impossible. What is that difference in the soil? Can we find out and apply the missing link? One grove is infested with red spider. A neighbor's grove is never harmed. Can we tell why? The red spider is in one grove because the conditions are such as make a residence there pleasant.

He is not in the other because the conditions are not suited to his fastidious taste. Dieback attacks one grove and does not another, simply because the conditions in one case are unnatural and produced the disease, and in the other there is nothing to cause it. As tillers of the soil, as advanced horticulturists, I believe we should direct more of our study to prevent disease instead of curing it, to prevent the propagation of insects and fungus as more effectual and cheaper than killing them. This subject broadens and deepens as I approach it, and it cannot be treated at length on such an occasion, but I hope thought will be turned in this direction.

After we have grown our fruit it must be sold in the market, and that market, in this day, can only be reached by steam. The production of fruit is a legitimate industry, and such industry should have a fair reward. The transportation of fruit to market is also a legitimate industry, and should have a fair reward. That one of these should take more than a fair proportion of the proceeds of a crop of fruit is a clear injustice. I am clearly of the opinion that at present a grower does not get a fair proportion of the money his fruit sells for.

The Florida Fruit Exchange reports its gross sales this season at about $1.75 per box, and net the grower about $1. This analyses thus: Grower 54 ¢; box, etc., 45 ¢; Fruit Exchange, 14¢; transportation 62¢ ; total $1.75. The grower gets a trifle under one-third what his oranges sold for, and someone else gets two-thirds.

The transportation from Florida is more than double what it is from California, per mile, notwithstanding our roads are largely sustained by way business, while the Pacific roads run hundreds of miles through an uninhabited waste, and over grades and curves that to our own coast lines are unknown. A man in Minnesota can send a bushel of

wheat to Liverpool, 4,500 miles, for less money than I can send a box of oranges to Jacksonville. In a matter like this, where the success of a business depends on a fair division of income, it ought to be amicably arranged, so that producer and carrier can each have a fair proportion. Much was hoped from our State railroad commission, but it proved such an abject failure that the legislature legislated it out of existence, and very few tears have been shed over its grave. That same legislature proved itself a flatter failure than the commission, by failing to enact something better in its place.

If the fruit growers of the State have any influence it should be steadily and actively exerted in favor of such legislation as will have the rates of transportation fixed by a competent and disinterested tribunal which will deal fairly and justly with producer and carrier.

One of the burning questions which confronts us, is how to sell our fruit. We have made perceptible progress in growing fruit, but not in marketing it. It takes very little penetration to see that consigning our fruit to the tender mercies of commission merchants in distant markets, is a crude and unsatisfactory way, but as yet we have found nothing better.

About eight years ago, the Florida Fruit Exchange was organized, and we all had high hopes that it would meet the want. That year it handled about 10 per cent. of the crop of the State; the next year, about the same. The results achieved by this organisation have been such that it has about held its own handling 10 percent. of the crop each year, until this year it reports the handling of about 9 per cent. This would seem to show that, from some reason, this institution has not succeeded in getting the confidence of the orange growers of the State, though I am confident a large majority have given it an opportunity to show its ability to get money for oranges. The fruit growers of Florida will need no urging to patronise the mode of marketing which will get the most money for their fruit, and so long as commission men give us the most money, they will get the most fruit.

Three years ago the Orange Growers' Union was organized, and a vigorous effort made to unite the orange growers in some general plan for marketing the crop. That organization came to an end, from causes too well known to need repetition. The Home Market or Orange and Vegetable Auction is another scheme from which growers hoped much. The indomitable energy and unfailing faith of its manager deserved success. The idea seemed plausible, to bring all the fruit and all buyers together at Jacksonville, and sell fruit near home. A good many buyers came, and a good deal of fruit was sold. But here was the trouble: the buyers did not dare to bid, for they knew that the market for which they were buying was liable at any time to be glutted with a deluge of fruit consigned by growers to commission men, or consigned by the Fruit Exchange to the auction room, either or both of which would cause them loss.

So, sad though it be, I said we have as yet found no better way to sell our fruit than to consign it to commission men. We don't do that way because we like it, but because we grow oranges for money, and that way brings the most money.

The Fruit Exchange had a meeting at Jacksonville a few days ago. The Home Market will have one in Gainesville in a few days, and another move will be made in Orlando, of the growers themselves, a little later. Out of these meetings and consultations let us hope that something will be developed to give the growers a fair reward for their toil.

Besides the growing and marketing of our fruits, and the more making of money, the State Horticultural Society hopes to have a beneficial influence. We hope to make men better morally, more intelligent mentally, more agreeable socially; for meeting together, we shall be better fitted in every way for the duties of home and citizenship. We shall get new ideas of how to make our homes enjoyable, by adding new beauties, new comforts and new pleasures. In short, let us make these meetings so pleasant and valuable that we shall all be glad to come, and make our homes so lovely that we shall be glad to return to them.

On motion of Rev. Lyman Phelps, Messrs. Taber, Hubbard and Bielby were appointed a committee to consider the president's address, and report before the close of the meeting.

REPORT OF THE SECRETARY.

Mr. President, and Members of the Florida State Horticultural Society:-

I have the honor to present to you the following report: I had the pleasure, one year ago, of reporting this society in a flourishing condition, and that the membership list showed a gratifying growth during the year. That report will apply at this time in an increased ratio. There have been nearly a hundred names added to our list during the past year, and the list of unpaid members is smaller than one year ago. The interest in our society and its work is more universal and widespread among the horticulturists of the South than ever before, and its future promises to be a prosperous and useful one. My cash account stands as follows:

| | |
|---|---|
| Cash on hand at time of last report, May 12, 1891 | $25.89 |
| Received in fees and dues at last meeting | 54.00 |
| Receipts of last year not accounted for in last report | $79.89 |

CR.

| | |
|---|---|
| May 12. To E.O.Painter, for printing badges and receipt books - | $10.80 |
| " 12. " Telegrams to stenographers and to Chicago | 3.40 |
| June 3. " Freight on paper | .30 |
| | $14.50 |
| Commenced present year with | 65.39 |
| Received in membership fees up to this morning | 77.00 |
| | $142.39 |

CR.

| | |
|---|---|
| By E.O.Painter,for printing,as per bills shown | $7.25 |
| Paid express during year | 2.20 |
| Rubber stamps | 1.15 |
| Simplex copying device | 6.00 |
| Copying ink | .25 |
| Stamps and postal cards | 9.83 |
| Expenses in securing low rates on railroads | 5.75 |
| Advance to stenographer for expenses | 10.00 |
| Year's expenses to date | $42.43 |
| Turned over to Treasurer | 48.54 |
| Dispensed during year | $90.97 |
| Leaving in my hands at present | $51.43 |

W. S. HART, Secretary.

REPORT OF THE TREASURER.

| | |
|---|---|
| Amount on hand as per last report | $139.50 |
| Received from Secretary since | 48.54 |
| In treasury May 3, 1892 | $188.04 |

Of the above amount the $139.50 was in the First National Bank of Palatka.

J. B. ANDERSON, Treasurer.

Note.- This bank has since declared a dividend of 35 per cent., which makes the cash in the hands of the treasurer at present $97.56.

Secretary.

(EXHIBIT D.)

Mr. Bielby.- I wish to say something in reference to Mr. Anderson, who has been the treasurer of this society ever since it was organized. Mr. Anderson deposited the funds of this society in the First National Bank of Palatka, which you all know has failed.

He also deposited his own personal funds in that bank. Of course our money was lost like all the rest. Mr. Anderson came before the executive committee, and said he would bear the loss himself and not mention it to the society. The executive committee took a different view of the question, and we think that he ought not to be expected to bear the society's losses. I told him that I thought no member of this society intended that he should pay one cent, who knew the facts in the matter, and that the money lost was the society's loss and not his. I am sure, sir, that Mr. Anderson faithfully executed his trust. We have the utmost confidence in Mr. Anderson's integrity and good judgment. He certainly used all the judgment and care anyone could.

Mr. Phelps.- Mr. President, Mr. Anderson was simply carrying out the advice of the executive committee. He was advised to put the money in that bank.

Mr. Taber.- I move that the society bear the loss of this money, and approve of the action of Mr. Anderson. Of course the society is to receive the dividends, if there are any.
Adopted.

Mr. Bielby.- Mr. President, as we have some time left yet before dinner, I move that we proceed to the discussion of subjects not on the programme.
Adopted.

Mr. Delano.- I presume that it is well known that there is a strong effort being made throughout the State to make a more perfect organization of the fruit growers than has ever before been made. We have had several conventions in Jacksonville. It is now pretty well understood that the time has arrived with the fruit growers of this State when they must take some position on the great questions of marketing and transportation of our fruits. One of the conventions, I think, represented over one million boxes of oranges. Those conventions conferred, not only in regard to transportation matters and the distribution of fruit,

but in regard to every horticultural interest. I would like to say to this society that, on the 19th day of this month, at Orlando, another convention will be held. There is nothing more important than the marketing of fruit at home. Now this organization, which is being formed, has no connection whatever with any commercial house, or any other organization. It is simply for strength. "United we stand, divided we fall," is a true maxim. When we have attained sufficient strength, we can dictate to the transportation companies. Now, I am not speaking about our State railroads. I live over one hundred miles from Jacksonville. I get my oranges shipped to Jacksonville for 20 cents; we pay 40 cents per box to New York; we pay 70 cents a box to Chicago; California pays 60 or 65. California is 3,200 miles away, while the distance from Florida is only about 1,000 miles.

Now, then, if we organize, we can do a great many things. We can prevail on Congress to deepen the water of the St. John's river. We have got all the competition that is necessary. In a conversation I had with one of the officers of the Vanderbilt system of railroads, I was told that they would give us a cheaper rate to Chicago, by way of New York, if we would all ship that way. We want a line from Jacksonville to New York; A line to Chicago and back to Florida. There are other systems besides the Vanderbilt from which we can get almost the same accommodation, and I simply mentioned the Vanderbilt because it is the largest. There is the Pennsylvania, and other roads. These would put on trains running to Chicago in two days; they would put on mammoth engines which would not be able to run on our small roads from their immense size. I think, sir, that the time will come when transportation cars for Chicago will have to go to New York. I would like to say that we want you all to come to Orlando. I believe that it will be the means of augmenting the ranks of this society. We will pull with you in every way for the agricultural and horticultural interests of this county. We were to have held our meeting at Orlando on the 4th, but after receiving a

letter from the secretary of this society, stating that you would be in session on that day, we postponed the time of our meeting until the 19th.

If the orange growers of this country cannot be organized under one system, and into one society, they must, at least, be prepared to work in harmony on this great question. I have heard that one cowboy can eat twenty oranges, and we will sell those at five cents apiece, and there are a great many cowboys in the West. We want a way of distributing the crop, and this we can accomplish when we have organized. I do not care anything about the Fruit Exchange, but if it will pull with us, I will be glad to have it; and if we can succeed in organizing the fruit growers, or even causing them to work in harmony on the question of marketing and transporation, we shall have accomplished a great deal.

Mr. Healy.- The gentleman's statistics are rather vague, and we would like to have more. He says that one cowboy can eat twenty oranges; now, we would like to know how many cowboys there are, so as to be governed accordingly, in shipping our crop.

Mr. Bielby.- Mr. President, I notice that the programme does not contain anything about irrigation, and I know several men here who would like to gove their experience, and hear what the experience of others has been, as to the best method of watering the soil.

President.- If there is any member here who has had any experience, will he please favor us with an account of it?

Mr. Harding.- Mr. President, there is an industry in Florida which I would like to get at in connection with this matter of irrigation, and that is the raising of tomatoes. A gentleman was telling me about the raising of tomatoes quite extensively in the lake region, near Bartow. He represented it as a very prosperous thing, and thought that they had been asked

to consign a carload to Liverpool. I would like to know the amount of the crop. Tomatoes are just now in great demand. I heard, also, that a great deal of this crop was being destroyed by the drouth. I would like to know if it could not be remedied by pumping water from the overflowed lands there?

Mr. Haynes.- They had very little rain, and the prospect was that they would lose their whole crop. There were three thousand crates shipped from Winter-Haven. They have all the facilities for irrigation that they need, and I presume that both where they are, and at Clearmount, there will soon be a good system in operation.

Mr. Bacon.- I have had very little experience with irrigation; but what I have had, has demonstrated about this: it is perfection for plants, and causes them to thrive well; but, as for irrigating orange groves, my experience has undecided me, in my own mind, whether it is favorable or not. I have had a flowing well for about eight or ten years; I experimented with water, but did not know enough to send the water all over. I got tired in several years. I did not see any difference in trees where the water was near, and the ones which were some distance off, sixty feet away. As I did not see a particle of difference between those trees which were irrigated and those that were not, after a while my ardor dampened. My well cost about $250. There was absolutely no difference between those trees five and those sixty feet from the water.

Mr. Hamlin.- Is not your grove very low, and does it not suffer very little from drouth.

Mr. Bacon.- No, sir, it suffers very greatly from drouth. My land is hammock. The front ridge, nearest the river, is very rich and well cultivated; is of black soil, containing some shell and considerable humus, and is exceedingly drouthy. Even after quite a shower, the soil is light and dry, perhaps one-fourth inch from the surface, and the foot sinks into it;

whereas, a short distance back, the soil is more sandy and contains less humus and shell. It is more compact, and absorbs and retains moisture better, and trees do as well upon it as on the richer soil. Last Monday we had a very heavy shower; after it was over, I dug down an inch and found dry ground in some places, while in others it was moist eight inches from the surface. This is my experience, and is, perhaps, an argument against the use of muck on thirsty soils.

Mr. Healy.- I had the pleasure of visiting the Bacon grove, and it struck me as a very curious thing in regard to his irrigation, I looked all over his land very carefully. I know nothing of irrigation, I must say, but I did not see any particular difference between the trees which were situated very near water and those sixty to one hundred feet away. Mr. Bacon was there then, putting in a pumping plant, for which I must say I saw no particular use. The upper part of his grove, which is about one-eighth of a mile from the other, and which I went up to look at, is, I think, by far the best-looking grove of the two. The back part of it is very near the scrub.

Mr. Hamlin.- I desire to speak a word now, because what I came here for, and what I am now here for, is to derive all the information I possibly can from this meeting. The question that is now before me, is not the source of the water, but the best method of applying it; the proper way to get it through the grove; the kind of pipes to use, and all those questions which would naturally arise. Now, it is my purpose to make the acquaintance of any member who has had any experience in irrigating that I may converse with him as to the best methods. I would like to know, particularly, as to the method of putting in pipes. The plant which I have is in good running order, and my experience is exactly in contrast with Mr. Bacon's. The groves, which have not been watered have not brought forth a single box of fruit, while all those which have been watered this year, during the dry times we have had, have not dropped a leaf and have put on a wonderful growth, and are in good condition in every respect. This is especially true in regard to Mr. Seeley's grove. The matter of application is a thing which I have experimented with during this dry

time. We began by watering broadcast, and watering all over the place. We neglected to apply the water separately to each tree. We did that for a num ber of days. In looking over the grove, I was surprised to find that it had apparently all dried up, and I could not find it moist more than one inch deep at any place. The ground was dry within three hours. We had groves that the leaves became so dry, and parched, and curled, that, when you brushed against them, they would rustle like they were dead. In applying it broadcast, in the way I have described, there was no great improvement. Then we adopted the plan of sending a gang of men ahead to dig trenches, into which we put alike the same quantity of water. Where it was applied in trenches, it was a great deal better than the mthod of applying it broadcast. And so, ever since that time, we have applied water in trenches. Now them, it is settled, so far as we are concerned, that we must have irrigation. The method of putting water on, is what I now want to know. If anybody, who has had any experience, is present, I would be personally thankful for him to tell us something about his experience.

Mr. Holldridge.- There is a gentlemen here from Nashua, Putnam county, who has an irrigation plant.

Mr. Stoddard.- My experience has not been very large as yet. I put in a plant about two years ago; the first year I put it in I had a good crop; I commenced sprinkling, and threw the water from hose at the rate of about ten barrels a minute. My water supply, however, was very limited. I put the water on in areas of thirty-six trees. When I had finished a section, I had to wait for the well to fill. The next day we sprinkled the adjoining section, and continued in this way until I had my whole grove thoroughly irrigated. Last summer I was away from home on account of the sickness of my wife. I do not know, as yet, whether it is a success or not, as I have not had it long enough to thoroughly test it. My trees have not suffered from drouth. I am now drawing water from a

pond about one-half mile from the grove. The piping from the pond to the grove is four-inch; after it reaches the grove, it is only about three inches. The pond is sixty-six feet below the surface of the grove. I have no difficulty in covering the whole grove with water, one-quarter of an inch deep, in two days. I want to put on four times as much as I did. I sprayed the water by means of a hose; I throw it high up in the air, and let it fall on the trees with great force, but it does not injure the trees. I have a very intelligent man to attend to the hose; he finds no difficulty in holding the hose all day. A portion of my irrigating plant is automatic; when my man closes the hydrant, the pump stops; when he opens the hydrant, the pump starts up. The water falls very heavily on the trees, and I have yet to find that any injury has ever been accomplished by it; not even a leaf being knocked off. I dug a well about ten feet deep, and about thirty wide. In December I deepened the well about six or seven feet. I put down an artesian well, two hundred and eight feet deep, and find no sulphur water. This land of mine is dry pine land.

Mr. Delano.- Iam trying, Mr. President, to contract for a pressure system, about one hundred and twenty-five pounds to the inch. Now then, sir, there is here one of the most famous men of the State, and one who has had, probably, more experience than all the other men in this State, in regard to irrigation. I would like to have his views on it. I refer to the Rev. Lyman Phelps.

Mr. Phelps.- I am very much obliged for the compliment which he has given me, although the worst thing to hurt a man is flattery. This reminds me of a case in which I was a witness; after I had told them what I had seen and knew, defendant's counsel questioned me as to what impressions I had. I refused to answer him, on the ground that impressions were not testimony. One thing I say, and that is that there has not been such a light rainfall in this state since the year 1875. I know so little of irrigation that I cannot talk about it. A gentleman whom I know, at Lake Munroe, and who is quite a prominent orange grower, will not put any irrigation on the grove of his which he thinks the most of.

Mr. Wright.- I have a very good and simple irrigation plant in shape of windmill, tank and pipes. I find that one thorough watering is the best. Do not irrigate again until the ground is quite dry. I asked Rev. Mr. Lawton, of Oviedo, how his fruit was, and he told me that it was getting on finely. He also told me his method of watering, which was to dig trenches and fill them full of water. He said, after doing so, he could see a new growth starting on the trees. The Nelson brothers, also of Oviedo, put in a plant. I saw their trees, which were very nice and had not suffered in the least from the drouth.

Society adjourned.

AFTERNOON SESSION.- 2 P.M.

The afternoon session was promptly called to order by President Adams, at 2 o'clock, and showed a very large increase of members over the morning session. The president announced the first business in order to be the report of the executive committee, Rev. Lyman Phelps, chairman.

Mr. Phelps.- Mr. President, Ladies and Gentlemen of the State Horticultural Society: As chairman of the executive committee, to whom was referred the question as to incorporating this society, I have to say: I have put this paper in legal form merely to let you know what steps we have to take to be incorporated. The society must have a home or place of meeting. It must be in some particular county and State. I have put Sanford, Orange county, simply for convenience, and the society can, of course, change it to any place they may wish. The notice of incorporation has to be published for seven days before the incorporation meeting is to be held (See Articles of Incorporation.)

Mr. Bielby.- There is one matter contained in that report which I think the society should take some action upon, and that is in regard to the time of meeting. If you put in your notice of incorporation that the society shall meet on the first Tuesday in May, you will have to meet every year on that date, without power to change it. The first Tuesday in May

is perfectly satisfactory to me, so far as I am concerned personally, but it might not be to others. I move, Mr. President, that the matter be again referred to the executive committee, for the purpose of perfecting the organization, and that the chairman call a meeting of the committee to that effect.

Adopted.

Mr. Phelps.- There was referred to this committee, also, the subject of nomenclature. I need not take up the time of this society in discussing this subject. I move that the society request Mr. H. S. Hubbard to give us a diagram of the descent of different fruits from the primary ones, and to illustrate it by some talk to the society.

Motion carried, and Mr. Hubbard invited to address the society on nomenclature.

Dr. Hanks.- Mr. President, before we proceed to the next subject, I would like to know whether it is necessary to incur the expense of incorporating the society in Sanford?

President.- According to the requirements of the law, we have to meet and give seven days' notice to perfect the incorporation.

Mr. Phelps.- We wanted to do it here, but found that we could not; the law is not flexible in this matter.

Mr. Hubbard.-,It is rather unexpected to me to talk on this question. My researches show that the citron has been the fruit which has improved the others. I find, beside the citron, three other supreme qualities from which the others have all come. One is the wild lime, or sour orange, which is the most acid and pungent of the family of Citrus. The mandarin, a loose-skinned, segmented fruit, is another, and the fourth quality is in color red, and is represented by the Blood Shaddock. All the different varieties of fruit have been caused by these four

qualities being intermixed. Between the mandarin and the shaddock we find the tangerine. The red skin of the shaddock is crossed on the mandarin, and thus the tangerine has a musk flavor. Then, between the blood shaddock and the citron, we find the oranges in which the blood cells of the shaddock have been transmitted to the orange family. The citron has been added to the acid of the wild lime, giving the lemons and limes of commerce. Of course, there are a great many varieties. We have the sour orange, the bitter-sweet orange. Then we have oranges which are nearly as sugary as the citron, as, for instance, the sweet Seville. On the other hand, we have the wild lemons of Florida. I think the wild lemon of Ceylon is not so eatable as the Florida lemon, which seems to be of much better quality. The form of the acid fruits, represented by the wild lime, is added to the sweet citron, forming the sweet oranges. There are a great many oranges which have different names, which are of very nearly the same variety. Of course, this is a subject which is open to investigation, and this list is subject to rearrangement. Our list of fruits, that is, what is used commonly, is simply a list of names and kinds, without giving reasons for them. In regard to the orange cell. The citron cell is very different from the cell of the sour orange. Those oranges which are the most sugary and sweet have large cells, while the lemon or sour varieties have very small cells. I think what Florida needs is an arrangement of the nomenclature of the citrus family.

(DIAGRAM; EXHIBIT E.)

| Citrus Nobilis | | Citrus Decumana. |
|---|---|---|
| Mandarins. | Tangerines | Blood Shaddocks. |
| Suntara Oranges of India | | Pummeloes, or Grape Fruit |
| Oonshiu of Japan | Citrus Medici. | Blood oranges. |
| Coolie of China | Citrons. | Malta Crosses. |
| King of Siam. | | |

Kumquat.

| | |
|---|---|
| Sweet Juiced Limes and Lemons. | Sweet Seville Oranges. |
| Sweet Rind Lemons. | Sweet China Oranges. |

Bitter Rind Lemons.
West India Limes.
Tahiti Limes.
Indian Limes.
Rough Lemons or Limes.

Portugal Oranges
St. Michael Oranges.
Bitter-sweet Oranges.

Sour Seville or Bigarade Oranges.
Wild Leech Lime of Ceylon.

Citrus Hystrix, Kurz or Limo Ventricosus of Rumphius.

Citrus Trifoliata.

CITRUS GENEALOGY.

In submitting this informally to the Florida Horticultural Society, I do not claim absolute accuracy or positive proofs. Bonavia is of the opinion that "nothing in connection with the citrus is better established than that the citrus is descended from a progenitor with a compound leaf." This relationship is not closely shown in the wild lime family.

As it is impossible to trace the citrus to its primal type or types, and as the origin of many species and varieties can be shown with considerable historical certainty to be the results of hybrids and crosses, I have taken as the basis of a systematic nomenclature the four types or principles that, as simple, triple or quadruple hybrids, are present in all citrus that have as yet come under my observation. These are the citron, which is the ennobling type; the shaddock, which imparts the red principle; the mandarin, with its loose skin, and the sour orange, which supplies abundant acid juice and the round form.

The kumquat is interesting as furnishing a direct link between citrons and wild limes. It may possibly be a link in the ancestral line, from which the citrons, of to-day are descended. The hybrids from citrons and wild limes are in two lines; one in which they assume the citron form, but the acid juice of the lime, and the other in which they keep the wild lime or orange form, but acquire the sweet properties of the citron. As only the best varieties of

the mandarins and shaddocks have been introduced in this country, I have had no opportunity of studying the inferior and unimproved varieties, and give only the better known hybrids of these species with the citron.

Mr. Bielby.- It strikes me that this society ought to do something about straightening out the nomenclature of the orange in Florida. It is certainly necessary, and should be done. I think it ought to be given to someone who has had experience, and who loves it, to make out a list.

Mr. Phelps.- I can endorse every word that my brother member of the executive committee says. I think we have got to reach the practical part of this matter. I am very grateful toMr. Hubbard for his talk, and for suggesting this making a table of names. I think this should be done, not so much for ourselves as for the world. I think it can be done as Mr. Bielby suggests, and I must say that nothing would please me more than to see this list ready for Chicago, in case we have any exhibit there at all.

Mr. Bielby.- I move the president appoint a committee of two to take under consideration the subject, and perfect, as far as possible, a table from the best data upon the nomenclature of the orange; and I would like to say, that I make this motion simply because no one else will do so. I move that the president may exercise his best judgment in appointing this committee of two, which number I think will be sufficiently large.
Motion adopted.

Mr. Bielby. - I do not want any list of what oranges are the best. I want a list of the oranges; I would like a list of those oranges that can now be distinguished. As to recommending any particular orange, we cannot undertake to do so, because one will thrive better in one portion of the State, while in another partof the State, perhaps, another will be the best.

Mr. Mott.- It seems to me that we should make a list of which are the best orang es.

Mr. Bielby.- The work which I suggest is absolutely necessary, and after we have this list made out, then, possibly, we can think of recommending some particular orange.

Mr. Mott.- I think the matter of which is the best orange, is a very important one for this society to take up. I was asked, the other night, by an old gentleman, which was the best orange, but could not tell him.

Mr. Phelps. - The State of Florida is a long State, and an orange which I might think best in my neighborhood, might not be so good in another portion of the State. We hope that at some future time we may be able to find out more about which is the best. I would not be willing to undertake to state which is the best orange in the northern part of the State. The orange which is best in different portions of the State is the one which is considered best by those in that particular section.

President. - The chair will take time to appoint this committee.

Mr. Anderson.- I would like to know if this is intended to apply simply to oranges, or to the citrus family.

President.- The citrus family, I think.

President.- We will now hear the report of the Committee on Grapes. Mr. Von Luttichau wrote me that on account of the delicate state of his health, he would not be able to attend. I was in hopes that he would contribute a paper, but it seems that he has not been able to do so. (Paper received later, and is here presented as Exhibit E $\frac{1}{2}$)

REPORT OF COMMITTEE ON GRAPES.

(Exhibit E$\frac{1}{2}$.)

Mr. President, and Members of State Horticultural Society:-

Numerous letters were received in course of the

year, since your last meeting, inquiring about the system I follow in trimming the foreign grape vine. Whoever is familiar with the subject will know the difficulty in answering such letters satisfactorily. The other members of your committee on grapes will bring before you whatever there may be new and of interest about our native varieties, and, therefore, I may take this occasion to give in brief the method I principally follow in trimming the foreign grape vine.

There are many, some rather complicated, systems recommended, which look most attractive on paper; and, if all conditions were equal, all grape vines would grow alike. We may select a pattern to our taste and convenience, but, after three years or so, each vine will usually insist on its own system, which we only can direct as much as possible to our wishes, which must conform to existing conditions, different everywhere, especially so in Florida. Any manner of trimming, which involves canes or lateral canes of more than two eyes, will result in a barren piece of wood, the terminal eye only sprouting. The first rush of sap will generally pass all intermediate eyes, which not only will lessen the fruiting capacity, but also weaken the vine; all will be exposed to the rays of the sun; much difficulty will be experienced to grow young wood, and it is on such that we get the best fruit. Therefore, all fruiting wood should be as close as possible to the main cane, allowing only for space, and new wood should be raised from time to time.

Too much wood, or too much fruit-either will prove injurious. Like Delaware, a Vitis Vinifera vine will be forever ruined, perhaps killed, if allowed to overbear, or to bear when not of size, a tendency but too prevailing.

Trimmed to two good eyes, roots to about six inches, the vine is set out some two inches below surface of ground, and perhaps covered with some light mulch. So planted, and early start is prevented, the young shoots have a better chance to escape late freezes in March, which have become the rule, and which have caused the death of many young vines. When all danger of killing freeze is over, I remove mulch, some little soil as well,

and permit but one eye to grow. When of sufficient size, this young shoot is fastened by means of a one-inch copper staple to stake; I used to have wire for all my vines, but now prefer stakes for all foreign varieties. The first summer will establish the vine, and is, perhaps, the most important. Good culture, such as given to Delaware, is essential. Now, the young vine may grow all satisfactorily, but it may happen, after a time of promise, a change from health to a most sickly appearance is apparent. Leaves will look dried up, turned over on edges, burned-like, the leader will wither, fall out, and finally the vine will die. To all appearances we have Anthracnose doing this destructive work. But such is not the case. Close examination will reveal the presence of a small yellow insect, of lively disposition, provided with the best of locomotion in the shape of plenty of legs, a good pair of wings and a sharp pick. I believe this insect does much more damage to every kind of plant, leaves, seed and flower, than it receives credit for. Anyone can find it by the billion on the orange tree, which alone appears to resist; one rose will contain some few hundred; all flowers or leaves attacked will soon show its effect. Usually it does not go so much on grape vines, but, when it does, it is perfect destruction to the flower, and its work is exactly like Anthracnose. An old vine will recover, but a young vine of but one shoot is stunned to such an extent that, in the majority of cases, if left alone, it will die. This insect, of which Lane told belongs to the Thrips, although the well-known Thrip on the grape vine is altogether different, prefers and is attracted by young and shiny leaves, such as the young leaves of Vitis Vinifera.

When this sickly appearance is noticed, at once a solution of whale-oil soap should be applied, and followed by a dusting of air-slacked lime; in but a few days the vine will look as thrifty as before. I trust that those who have tried to grow the foreign grape vine, and have failed, will find here the cause of failure.

The vine should grow up on the stake unchecked; and here, I will say, I practise no pinching whatever; I

used to do so, but have learned better; it may do well anywhere else, but not in Florida. In December I prune the vine to about one foot, if strong enough, and fasten to stake in a somewhat twisted position, better to insure the start of two eyes, which two canes are grown the second summer. December next, one cane is cut to two eyes, the other to twelve inches or about, and fastened, also twisted and slanting as much as possible. This third summer there may appear two shoots on the spur, perhaps one in the soil, and the two uppermost eyes on the twelve-inch arm will sprout. The amount of shoots or canes allowed to grow and to fruit now, and especially in the future, will depend on strength and vigor of vine. If four canes have grown and fruited this third summer, more can easily get added, when next trimming, and from now many more will appear as required. The health and future of the vine will depend on the judgment of the grower, who should remove, or rub out all superfluous shoots, when fruit can plainly be seen; what later on may appear, should remain. After the third year, a new cane should be encouraged to grow as near the ground as possible, and the process of trimming is repeated, with the exception, no fruit should be removed of this new cane. When this new cane has its two eyes growing and fruiting, part from the old cane is removed, which, whenever the new cane has attained size and age, should be removed altogether. I do this as soon as fruit is off, not waiting for next trimming time. Should an old cane apparently give out, and the new one grows tardily, I remove the old cane at once, as soon as the first flow of sap is over.

My vines, at this date of writing, look perfection, have almost reached the top of the six-foot stake, and no sign of disease can be found, although I use no preventive wash whatever, and never have. My oldest vines are now ten years, growing most luxuriantly and fruiting full. Last season, all fruit was, perhaps, the best I ever raised. Chasselas, Hamburgs and Madelaine were perfection.

I will conclude with a word of warning against indiscriminate grafting. Vines on their own roots are far better than unsuitable stock; the only vines which have

declined were those grafted on such, like V. Vitis aestivalis, and on some Vitis Labrusca, Concord and Perkins.

H. VON LUTTICHAU.

Mr. Wright, of the committee on grapes, said:- I have not considered the scientific side of the question of grapes at all, but have simply written a little paper, based upon my own personal observation.

(EXHIBIT F.)

Six years ago there was not an acre of cultivated vineyard in Orange county. On April 13th of this year there was organized at Orlando a Grape Growers' Association, and at that meeting there were represented three hundred and fifty acres of vineyards, and there are fully one hundred more acres of vineyards in the county that were not represented at said meeting.

Most of the vines planted are Niagara. The soil and climate of South Florida seem well adapted to grape growing, and at the rate of planting that has been made the past six years the industry will be of vast importance to Florida in the next decade. The white Niagara has largely led all other varieties so far, yet there are several others that promise well. The Diamond, a new white grape, is doing well on higher pine land; also the Duchess. I have as fine Duchess as I ever saw North. The great objection I now see to it is its early starting of new growth. It showed leaf buds fully two weeks earlier than the Niagara. The Delaware is very promising when grafted on the Niagara. The Herbemont is the most vigorous and most profust bearer of all varieties I have on trial. I have several vines, planted two years last March, which now are carrying from seventy-five to one hundred fifty bunches each. The vine is perfectly healthy. The Eaton is not so promising; same with Missouri Riesling and Worden. Montifiore, subject to anthracnose and the leaf burning in our hot dry sun. Norton's Virginia and Cynthiana are worthy of trial; both good wine grapes. Elvira is so far a failure, with the freeze of March 17, '90, and April 7, '91. I would not throw it out without further trial. Ives does very well, but is too poor a grape to grow where so many better varieties do so well.

To meet with the best results in viticulture in Florida we must resort to systematic spraying. In all northern grape-growing regions it has been found necessary to wash and spray the vines systematically, and at regular intervals, up to a month before ripening the fruit. There are now in use among grape-growers generally, different kinds of solutions for spraying vines; kerosene emulsion, the arsenites, London purple, Bordeaux mixture and several others are used for different diseases, mildew, insects, and rots. Of all these, as far as I have tried them, I prefer the Bordeaux mixture for grapes, except for the downy mildew. Washing the vines with sulphate of iron and then dusting the leaves and stem with dry sulphur is found very effective.

I have found in my own vineyard, and in others, a twig-borer that is doing some mischief. He works very similar to the apple twig-borer, or the currant borer. I have not been able to get him classified yet. When I get another specimen I will send it to Prof. Riley for identification. I find about the same diseases attack the grapes and vines here that we had to contend with in the North, and, to succeed, the vineyardist must give his work personal attention, with proper knowledge of the wants of the vine in soils, fertilizers, pruning, and training.

I have about fifteen different foreign varieties of grapes, all on their own roots. I have not found any of them satisfactory as yet; will try grafting some of them on other stock to test their value.

Chuluota, Fla. GEO. H. WRIGHT.

Mr. Healy, of the committee on grapes, said:- We have here Mr. Haynes of South Florida, who has had a great deal of experience in the culture of grapes. I am one of the committee, but do not know anything about grapes myself.

Mr. Haynes.- Mr. President, I am not one who can get up and make a talk before a crowd, but I will give our experience. Our success in the culture of grapes has brought us prominently before the public.

We have worked hard from the time we came to Florida up to the present. We came here in 1885. I came to Orlando for merchandise, and got discouraged, and made up my mind to go back where I came from. Riding through the country I saw the Labrusca growing, and, as I knew something of grapes, became interested in them, as they were not growing as is the general habit of the Labrusca, therefore, I commenced to look into the matter. I also found the Concord and the Isabella, and though they had not prospered in some places, I thought that it was because they had not had the proper treatment, knowing that the grape had to have sufficient water. I know the grape was over eighty per cent. water. Therefore, we decided after due deliberation, to make the test. We cleaned up a little piece of ground, and put out one hundred and fifty-five Niagaras. They grew well, and developed finely. We soon put out one hundred more. We put out the Concord, Delaware, and other Labrusca, but none seemed to grow as well as the white Niagara. Last year our vines started very nicely. On the 20th of March we had a very severe hailstorm, and had a great quantity of our fruit knocked off. We marketed and sold about four tons, whereas we had expected to have about twelve tons. We feel that with the proper care and attention and the right kind of ground, there is no reason why it could not be made one of the leading industries of this State. We believe the Diamond is a good grape; they ripen a week or ten days earlier than the Niagara, but it will not hold up in packing. We cannot recommend it as a grape to ship to distant parts. Ours, which promised well last year, did not do much; this year they have done better; they now have twenty to forty bunches to the vine. We have thirty-five varieties of grapes in our vineyard, but we have never had any which we could recommend, except the Niagara. I have no faith in other varieties of grapes for more than two or three years. The Herbemount was very good the first year and the second, not much the third year, and the fourth no fruit at all. In the radius of a few miles of Orlando we have four hundred and eighty acres of vines, which means a great many tons of grapes. I

find the vines growing very well this year; they look very promising. While there are a great many in the grape business, they will make money out of it if they go at it in the right way. When you put grapes upon land which will not grow oranges, you cannot expect them to grow. We propose to make it a success; it can be made just as much of a success, and is just as sure as the orange, but it must have the proper kind of culture.

Mr. Bostrom.- How do you train, Mr. Haynes?

Mr. Haynes.- This is something on which we have experimented for several years. First we clear the ground of everything then dig holes and set posts. Across sides of posts we place the first wire three feet from the ground, the second fourteen inches above. The vines are trained on these two wires the first and second years. After setting the vines we let six to eight canes grow for a few weeks, when we thin out and leave the best stand for grapes. The second year we let a third cane grow up, and at its close have the vines branched along second wire.

Before the vines start the third year we attach Haynes' Trellis Bracket to the inside posts, and a piece of wood 1 x 3 x 18 inches to the end posts, with a hole in each end to pass end of wire through and fasten. These wires, passing through a ring found on each arm of trellis bracket, keeps them in position, sixteen inches apart and six inches below the second wire. As the new growth starts out in the spring it is tied down on these wires, which forms a perfect umbrella shade for the fruit, which hangs clear of everything andds shielded from the sun, rain, and depredations of birds, which is very important. We find this to be the most satisfactory method.

Mr. Bacon.- Do you use fertilizer, and if so, what?

Mr. Haynes.- I use phosphoric acid and potash. We give some vines as high as five pounds. We give them fertilizer very frequently and find that it does them a great deal of good. About the middle of January or February we break up our ground and get it under cultivation. Once a week we run a harrow through the ground, until about the first of April, and the last

of this month (May) or the first of June we stop altogether. We use a No. 12 galvanized steel wire.

Mr. Hamlin.- Have you ever tried the raisin grapes?

Mr. Haynes.- We have tried the Malaga, etc. I do not think there is any place where these grapes can be raised in this country. My original grapes came from a grape company in Acorn, S.C. The second year we sent to the home company, and they came from New York. We had done nothing in the way of spraying until last year. In our own home, last year, we sprayed all our vines with a strong solution of pari s green. We did not see any fungi until last year. Before the vines started we made a solution of paris green; a quarter of a pound of paris green to forty to fifty gallons of water, and sprayed them with that. We have a cart that is drawn by a horse, and he does all the work. There are four streams, and we have a man to drive the cart.

Mr. Mott.- Speaking of the different varieties of grapes,- I know a gentleman who has the early Dawn, which is doing very well; it ripens a little earlier than the Niagara. I think that grapes should be grown on level ground.

Mr. Bielby.- Will the gentleman (Mr.Mott) tell us why grapes should be grown on level ground?

Mr. Mott.- I think all grapes do better on level ground. I see that the best of mine are on level ground.

Mr. Haynes.- My friend Healy says that I advised planting grapes in swamps, I do not; but I deadvise planting grapes where there is enough moisture to grow them. Just as soon as he or anybody else tries to grow grapes on a high, sandy hill, he will get left. Now, what are you going to do? The grape is over eighty per cent. water. High hills we do not get in Florida; you have got to get moisture, you have got to have water, and you have got to go to water, as it is not coming to you. As for advising the planting of grapes in low soil, I do not. We have planted some in low ground, and we are glad to admit it. You can hardly get ten acres of land in Florida that is the same all over. We find that

grapes grow better where there is water. The water-line of where our best grapes are grown is eighteen inches. One of our vines was under water three feet, but it did not die. Just as soon as we dug a ditch and drained that water off it was all right again. Our vineyards are a living monument to our success.

Mr. Bacon.- I have some grapes, and by close attention to them generally manage to get enough to put on the table when we have company. On the opposite side of the river we have three varieties of grapes, one is the Delaware, one is the Norton. I also have a vine which I was told to let run; I let it run, and am still waiting for that Niagara to bear, for that is what it is. I also have a Niagara on South Grove, which has done fairly well, as well as I could expect.

Mr. Healy.- I do not understand just exactly how the gentleman from the scrub can grow grapes. I have a vineyard on a small side-hill. The upper part, or side, of my vineyard is about ten feet to water, and the lower side is about eighteen inches. The upper side does very well. The growth of the lower is five times as large, and has set five times as much fruit as the upper. The Niagara which I have was absolutely set in hard-pan. In digging holes on the lower side I found any quantity of that hard-pan. I believe that there is some good in hard-pan, about which we know nothing. I believe that eighteen inches to the water-line with hard-pan is the best for the Niagara. I do not believe, however, that the white Diamond will do well in that kind of soil.

Mr. Phelps.- I have seen some of the hard-pan; in Mr. Healy's place it is a bed of phosphate. Mr. Healy is in no need of putting phosphate of iron and phosphoric acid on that soil.

Mr. Peck.- I think this will explain satisfactorily, in some respects, about the effect of hard-pan. I speak from experience, as I have about thirteen acres in grapes myself. On my own place, the other day, I had a man to dig down to water; in some places he found water twenty inches down, in others he dug five feet and found no water. Perhaps it would be

well to consider the question of marketing, in connection with this. After having shipped two hundred crates to New York and receiving a bill for $17, I have begun to feel a little discouraged.

Mr. Wright.- This is something which I confess I have not looked into as much as I should have. When I came to Florida I saw grapes growing, and thought I would try a few myself. I went back to my home in Iowa, and I sent my son-in-law, who was here, some Niagara vines. He put down about two hundred of them, which was the origin of my grapes. My son-in-law planted these grapes, and they succeeded well. Some time ago I set out about ten acres, principally Niagaras; about one-third of these were Florida vines and the rest were New York vines. It is impossible now now to tell which is which. The question as to whether the Niagara is the best grape is one of very vital importance to every one. I do not give any other grape its place, and yet I believe there are a great many other vines that will prove of equal value in Florida; still, for the present, I prefer the Niagara. I sent to Mr. DuBois for some grape vines. Mr. DuBois sent me some varieties. He put the Cynthianna at the head. He was growing grapes in Leon County. I planted all these grapes, I had about twenty-seven varieties, but the frost killed them all. In testing grapes I put them on an equality. I started out again, and my grapes grew well until the 7th of April came along, last year; some of them were killed entirely, others were somewhat injured from the frost. This year my Niagaras, Herbements, Diamonds, etc., are coming on very well. **** I made a solution of high-grade potash and gave them some two weeks ago. You are not going to get the fruit from off the Delaware that you can get off the Niagara. The Diamond seems to be perfection - it is a grand grape; a little earlier than the Niagara, but has not quite so much fruit to the vine. I am strongly of the opinion that you have got to make a hard fight to make the Diamond succeed, although it is a half brother of the Delaware. I believe in clean culture; we must get our fruit early. There is money in it, and we can beat the world. The finest vineyard, the finest grapes, rather, that I have seen in Florida are Mr. Westcott's, near Orlando. It is on very high land.

The best vines which I have are on the highest land. I believe that grapes will have to have thorough cultivation, and I do not think that any grape vine will grow where there is too much water.

Mr. Haynes.- In regard to transportation, the express companies are going right through to New York without change. The rates have been much reduced. We also have a crate called the "perfect spring crate," of which we are agents, and in which we expect from this time to ship all of our tomatoes and grapes. We conferred with the Express Company before we got this crate.

Mr. Phelps.- I move that we adjourn until 7:30 this evening.

Motion adopted.

EVENING SESSION. - 7:30 P.M.

Called to order at 7:30 by President Adams, who announced as the first business in order the

REPORT OF COMMITTEE ON FIGS.

Mr. Brown (of the committee). - Some people will make mistakes sometimes and that was the case when our worthy president appointed me as one of a committee on figs. I will state what little experience I have had with figs. About five years ago I sent to California for two or three varieties. They did not grow much at first, but about the third year showed signs of improvement. Some of them were killed two years ago, and they were at that time from six to seven inches in diameter. The owner of the trees had an ambition to make "trees" of them, as he had seen so many small, dwarfed specimens of the fig tree. Last year every one of them were frozen to the ground. The white Adriatic was certainly the best growing fig, and had some chance to succeed. We have abandoned most of those which we have left. There are some few of the old varieties with fruit on them, which I think may succeed. This is about as far as my experience goes with figs. The white Adriatic fig was very nice.

Mr. Bielby.- About the same time of which Mr. Brown speaks I also sent to California for some figs; and, while my trees were frozen in 1889 and in 1890, they were not so badly hurt as Mr. Brown's. I can bear him out in what he says about their bearing very fine fruit. If he has not planted the white Adriatic, he can afford to do so. I had three hundred of them at one time. It would pay one to have a couple of these trees for ornament. I think there were about one hundred bushels of figs on these trees, but when the rainy season came they cracked and rotted, and I did not get a bushel. I have also two garden fig trees, which are twenty feet high and spread over eighteen feet. I can get more than four bushels at a time from them. It does not approach the Adriatic in richness and flavor, but, notwithstanding this, it is a very good fig. They ripened last year on my place right through the rain. They do not grow so fast as some others, but bear heavily and are worth growing. I have the white Genoa, a fig which I got from California at the time I speak of. I think the brown Turkey is a fig which can be strongly recommended to every grower in Florida.

Mr. Taber.- Mr. Bielby refers to other varieties, and I agree with him; but he has omitted the Celestial, which is one of the best. I would place the Brunswick and the Celestial first, as being the finest. I would say the white Adriatic is the best in quality; they are what I would call a success. The Celestial is the best for family purposes; it is a very precocious fruit.

Mr. Healy. - I would like to ask Mr. Taber what he says of the cultivation of figs.

Mr. Taber.- It is liable to stand still for two or three years, and then grow. The trees look as if they never would grow, and then suddenly make a start. The fig is a fruit which requires considerable moisture, though but little cultivation, as the roots are near the surface. It needs a liberal application of fertilizer after the ground is moist with mulching. Some of my trees are troubled with root-knot. I have always found that in transplanting it is best to cut away all superfluous roots, and keep the tap-root

and set out just that one root, which, if properly pruned, will make the first year's growth astonishing.

Mr. Bacon.-In regard to the root-knot, I think it is with the fig tree as it is with a great many other trees and plants. A large amount of fertiliser put on a tree with root-knot will partly counterbalance the effect of it, but I think the root-knot will get the best of it eventually. I took up a tree, this year, of cape jessamine,- in fact, it was not a tree, it was simply a bush, - which was entirely covered with root-knot; so you see that it affects all plants. With a sufficient amount of fertiliser I think a fig tree will grow. My trees did not bear, so I slashed them, and they bore abundantly.

Mr. Healy. - I would like to ask the gentleman from the scrub what he means by "slashing."

Mr. Bacon. - By "slashing" I mean cutting the bark of the tree from the top down.

Mr. Mott.- In regard to figs, I would say, I have some very fine ones on my place. I believe that if we put on sufficient fertilizer we can raise figs easily, and can make it pay.

Mr. Mann. - I would like to hear the names of the gentlemen, when they rise to speak; who they are, and where they came from.

Mr. President. - The chair tries to do so. When the chair recognizes a speaker he announces his name, when it is known. The chair will consider it a favor if speakers will assist him by giving their names.

Mr. Bielby.- I move, Mr. President, that we proceed to the consideration of the next subject.

Motion adopted.

President. - The next committee is the one on Kaki and Loquats. One of the members is unavoidably detained by sickness; however, Mr. L. W. Lipsey, chairman, is here. Will he please introduce the subject?

Mr. Lipsey.- I have prepared a short address on Kaki, and left the other subject to the members of the committee most familiar with it.

THE KAKI.- (Exhibit H.)

The kaki, or Japan persimmon, as it is most commonly known, seems to be pretty well at home in the Southern States; the Gulf States, more than in some others. It has its place among the standard fruits of the South, and is with some people quite a favorite, while others consider it not equal in quality to the wild or native persimmon. As to appearance, it is admitted by all to be fine indeed. A fine, thrifty persimmon tree is handsome, more especially when it is loaded with the rich-colored and delicious ripe fruit.

In Florida we have never seen it affected by the cold, except by late March frosts.

It is almost always, in Florida, worked on the native or wild persimmon stock, either by grafting, in winter or early spring, above ground, or root grafting, or by budding during the summer. Each method has its advocates; trees seem to be equally healthy worked in either way, while we prefer the root-grafting method, although we are not very particular. The fruit ripens from August to November, but we have found our finest and best specimens ripe in October.

The tree don't seem to be particular about what kind of soil it is planted in, whether hammock or pine land, high or low. We have raised as fine fruit on poor pine land as on first-class hammock; we prefer the latter.

As to insect enemies, it has but few. We have found the twig-girdler and the borer to be the only ones to amount to much; the latter has destroyed more trees for us than anything else. Once we

were examining a tree that was affected by the borer, and we took a piece of wire and inserted it into the hole at the surface, made by the borer, and thrust it down in the centre of the tap-root four feet- the length of the wire would not permit of deeper investigation. As to the market value of the Japan persimmon we are not prepared to say much, never having shipped any; but we know by the market reports from the Northern cities that they were not wanted last fall, because there was so much other fruit.

As to varieties, we have fruited five or six, but only find three of them that we consider worthy of cultivation. We have fruited one which is rather small, ripe in August, and was nearly all seed. Another is large, slightly oblong, rather full of seed, never very soft, ripe in September and October. Still another, rather large, oblong, bright red, very soft when fully ripe, seedless,- and excellent fruit. Then we have another, large, light red color, shape of a large, smooth tomato, nearly always seedless; when fully ripe is very soft. The two latter ripen in October; some, however, will hang on the tree till November. We will not attempt to name any of them.

L. W. Lipsey, Chairman.

Mr. Taber.- I spread out three hundred samples of this fruit from different trees, and sent some fifteen to Washington to have the name of each given me. They gave kaki which came from the same identical tree, different names. The Hyakume is a large fruit, and is full of seed; in shape it is nearly round; it is one of the best, and one that is generally thought more of than most varieties of this fruit. The majority of varieties of the Japan persimmon are never allowed to reach the state they should before they are eaten. As I have stated, the Hyakume is one of the best and thought the most of, because the northern people think a persimmon should be eaten when it looks a little ripe. They will bear transportation, and stand a month or more after the arrival at their destination. Another persimmon is the Tane Nashi, a long,

pointed fruit, generally seedless, and one of the best. Others are the Hokema, Hachiya, and the Yemon. In order to make a success of the kaki we must have names; we can do nothing without names. The only way to get at the proper nomenclature is to do as I have done; that is, to keep your trees numbered, and then send them to an expert to find out the names. The Okame is a peculiar specimen of the kaki; it is round, somewhat like the Hyakume, and presents a corroding appearance at the stem. The fruit is a fine one. The Zengi is the smallest of the lot. The Yemon is a flat persimmon, nearly seedless, of tomato form. I have another, which is very much like Hyakume. I merely say this because I have spent lots of money and time in finding out what I know of the nomenclature of the different kinds. The Tsuru, I believe the only one I have not mentioned, is very long. It is one of the very sour varieties. If set out and allowed to ripen for six weeks it is generally good.

Mr. Phelps.- In 1887 I sent a number of specimens to Mr. Van Deman, and being rather skeptical about his knowledge of the kaki, I sent four persimmons off of one bush, and got back the names of four different varieties. When I told Prof. Van Deman, he said I was wrong. I like the fruit of the kaki very much. In last September I packed a box of them and went to the western part of Massachusetts. I packed them loose, and when I came back in the latter part of November I ate some of them, and they were very good. When I was in New York last fall I saw some very fine persimmons. In regard to the different kinds of persimmons, Mr. Berkmans has only made out six new varieties. I have one very peculiar specimen of the kaki; it is almost a square, running to a point. Then I have another one, which I consider the best; the blossom end is as smooth as a piece of glass. Although I admire the fruit, I know very little of its nomenclature. I have one which is a deep red, and if there is any one here who has had any experience with this particular kind of the kaki, I would like to hear from them.

Mr. Mott.- I have never been as careful as Mr. Taber about the nomenclature of the kaki. When I find that two persimmons off the same tree are given different names, I think that I might as well name my own. However, I name my trees myself. The one I think the most of is one which is not yet ripe. This year I only had about forty or fifty crates. In March and April I plant my trees out.

Mr. Taylor, Assistant Pomologist of the Department of Agriculture, Washington, D.C. - Mr. Van Deman found that it would be impossible for him to be here to attend this meeting, but instructed me to come here and extend to the society his hearty good wishes and his sympathy with them in their researches. I do not profess to have any experience on this subject, but know only what has come from a study and examination of the fruit. In regard to getting down to some correct nomenclature, and the ways in which it could be accomplished, it might be accomplished in the way Mr. Taber suggests. There was a man sent out from Washington to study the trees, take photographs, etc., and the result of his work is now in the press. I would like to know experience of gentlemen in different places. In the grove of J. Crenshaw, Jr., at Lawtey, which I went through yesterday, and which had been visited by the frost, I found the Hyakume entirely killed outright; the Kurokume, Dai Dai badly damaged, while the Yemon, Hachiya, Tane Nashi, Tsuru, and Yeddo Ichi were not injured.

Mr. Mann.- Would you plant and raise them Mr. Taber, for commercial purposes?

Mr. Taber.- Well, I am doing so. The prices which I have received from those I have sold were very good. Mr. Van Deman wrote me that the demand for different varieties was very great in Washington. The people in the North think the kaki is a good fruit, and they like it, but do not know how to eat it; they eat it when it is too

green. A man in Canada wanted me to send him some kaki this year. I got a letter from him asking me again when I was about ready to ship, and I sent him a crate. He paid me $4.50 for them.

Mr. Harvey.- I am from the western part of the State. I have tried some three or four hundred trees of the persimmon, but my trees seem to have been troubled with the die-back; I have never been able to discover any reason for it.

Mr. Mann.- I felt, a few years ago, more confident, but I have now lost all faith in them.

Mr. Harvey.- I will simply add to my statement that I leave my crop until it is very ripe before picking the fruit.

Mr. Winter.- I was told by a native that it could not be fertilized. I would like to know if that be true.

Mr. Phelps.- If we would only observe some of the common chemical laws it would save us a great deal of expense at times. I have not yet seen one variety which did not grow well under liberal feeding. I keep moisture enough under my own, and I think if the kaki is properly attended to it will grow.

Mr. Hamlin.- What is the proper fertilizer?

Mr. Phelps.- I think that is expecting a little too much of me.

Mr. Woodworth.- I have three varieties of the kaki old enough for fruiting. I find them all the same.

Mr. Bielby.- I move that we proceed to the consideration of the next subject, which is that of Fertilizer.

Motion adopted.

W.H.Mann, Chairman.- I have been in Florida ten years, yet I confess that I do not know enough about fertilizer to try to instruct this audience. Mr. President, I am undecided abou the subject of fertilizer. This year I have branched off into soft phosphate for my own use for fertilizing purposes. I have tried to find somebody else who was using it, but could not do so. Possibly next year I can tell you more about what I think of it. Last year I used linseed meal, which was very good. I think that Dr. Hawks has a long written article on the subject, so I would like to hear from him.

Dr. Hawks, of the committee said: It would be presumptuous in me to attempt to say anything on the subject of fertilizer after Mr. Mann has said that he cannot decide about what it is best to use. When I was appointed on this committee I was busily engaged in another work, so that I have not given as much time to the subject as I would have liked to.

(Exhibit I.)

Mr. President and Members of the Horticultural Society:-

When it first came to my knowledge that I was honored with a position on the committee on fertilizers I was engaged in a work that required all my time and thought and ability. In fact, it required more of these than I had; especially the ability. For several weeks I hoped the time would come when I might tackle this great subject,- for it is a great subject, and not second in importance to those of marketing and transportation; for without fertilizers of some sort we should have little or no need of markets, because we should have no surplus of products to send away, and no use for transportation.

But the opportunity did not offer, and I shall contend myself with offering the society a text or two for their discussion. If I am not fortunate enough to state some general horticultural truths to which all the members will readily assent, it may be better, after all, that I advocate some heresy that all will take an active part in putting down. At any rate, "I press the button, you do the rest."

The natural fertilizer for the orange tree, and in fact, for all other trees, shrubs, and woody vines, is decayed vegetable matter, - the rotten wood and leaves as they are found in every forest. Where these substances have been blown by the winds and washed by rains into hollows and depressions in the ground, and formed beds of muck, they are so many mines of wealth to the tree-planter and the farmer. Hauling muck into our grove or garden is not only a "harmless amusement," as it has been styled, but it is profitable, as well.

Look at those onions, five inches in diameter, on exhibition at the entrance of this hall, grown without any fertilizer but muck. It would pay to haul such muck several miles. But there are, no doubt, collections of black mud from which some of the most soluble portions have been washed away by currents of running water, or evaporated by the winds. It is very likely that time and money have often been wasted in moving a poor quality of muck. Leaf-mould, or the scrapings of the surface of the ground in the woods, may be hauled directly into the grove and spread over the ground and allowed to rot on the surface, or be lightly turned under with a plow, or mixed with the soil by the cultivator.

Fresh stable manures should be spread on the surface only, or very lightly covered in. If such fertilizers are applied freely and covered deeply about the roots of trees and grape vines, it will kill them every time, especially if put in the holes when planting out the trees.

It is not every orange grower who has a bed of rich muck, or a forest with the ground covered with leaf mould, or a stable or a barnyard. What are they to do who have none of these? They must, of course, use some form of the commercial fertilizers - blood and bone, cotton-seed or linseed meal for growing young trees, and ground bone and potash for the bearing grove, or some of the many complete orange tree fertilizers in the market. It is very important to test the relative merits of the various fertilizers offered for sale, and it is a difficult and expensive work to do.

Suppose, for instance, you want to find out whether a certain fertilizer does any good. You apply it to your grove, all but one row of trees; on that you don't apply any. If they are old, bearing trees, their roots will extend thirty or forty feet, and appropriate the fertilizers applied to the roots on each side, so that you will be obliged to devote three rows of trees to your experiment s, in order to get one row - the middle row - reduced to a low diet. Then, again, one year is not time enough, and two are hardly sufficient for a fair trial.

I once thought I would experiment to find out the value of salt marsh mud mixed with lime; but when I came to apply it to the grove I said to myself, "This compost I know must be good." I pitied the poor victims that I had thought to give some of it to, and so applied it to the whole grove. The next time was a trial with lime. I had plenty, and, believing that lime was good, put a shovelful of oyster shell lime to every tree. Since then I used ground bone and potash and gave directions to have it entirely omitted from three rows of trees clear across the grove. I had made up my mind, this time, in good faith, to see if this stuff was good for anything. But the man who applied it forgot the directions, and put it on all alike; consequently, I have not learned anything from these trials. I don't know, really, how much good any of these substances did to the trees; but I have tried the marsh mud and seen fresh water muck used so as to convince me of the value of both.

Mr. President and members of the Horticultural Society, an orange grove brought up and fed entirely on canned goods will not be a profitable investment, and when we find out the fact, and want to quit the orange business, let us go into the fertilizer business; there is an industry where the prices always run high, and apparently no danger of an over-supply. But you need not quit the orange business. Learn to make at least a part of your fertilizers, and, in making them, bear in mind this sentiment: Great is Fertilization, and muck is his high priest and prophet.

DR. J. M. HANKES.

Mr. Bielby.- I do not know but what I have worn out the subject of muck, but I think that I have furnished a great deal of "harmless amusement" for the Florida State Horticultural Society. I have not changed my opinion at all. The essay that I read at Ocala distinctly admitted that the hauling of muck to pine lands is a harmless amusement, if anyone can afford it. I believe that a great number of those who use muck have to cart it half a mile or more; but, assuming the position that I do, I would not advise anyone to carry it forty feet, or carry it at all. If a man's time is not worth anything, why, then let him cart muck, if he wishes. I have never yet found a man who would state positively that his grove depended upon muck. Of course, I admit that there is some good muck. The value of fertilizer, in my judgment, depends upon three things; its ingredients, the quality of material from which it is produced and the care of the people who put it up and bring it here to sell to us. I have not yet found out that the soil is particular from where it gets its ammonia and phospheric acid, just so it gets it. The question of soft phosphate opens up a wide field. I went in a large grove, a few days ago, and looked over it. The question was asked me, "Can you perceive any difference between those trees and the ones which we have just passed?" I examined them, and found that they had a much better appearance than the others. This part had no fertilizer except soft phosphate, with the same dressing of muck, cotton-seed meal, and five hundred pounds sulphate of potash per acre, with the rest of the grove. I could not help but notice the difference in those trees which had had soft phosphate used on them; they were very much better looking than the rest. In almost any part of Florida we can buy this phosphate from $9.00 to $10.00 per ton, while we now have to pay from $30.00 to $35.00 for commercial fertilizer. I think we ought to buy this phosphate, and I believe that it will give thorough satisfaction. I have been told by a great many men that it is superior to rock treated with sulphuric acid, and that it was perfectly satisfactory. These men have groves themselves and have experimented, and

are prominent horticulturists in this State. I think a good compost will make a good growth. I put everything on my grove--of course, excepting muck. Now men put muck on, hauled from a long distance. Does it pay? I do not believe that it does.

Mr. Harvey.- I have had very considerable experience with muck. I have raised forty-eight acres of pear trees and twenty-five acres of peach trees, and in the seven years I have been in the business in this State I have spent $14.00 for commercial fertilizer, and only $14.00. I got that amount worth of bone. I made a compost with the muck. One year I did put on four hundred bushels of cotton-seed; six years ago, I think. I have seen groves in all the northern part of the State, and I think I have got the best. I have pear trees, two years old, which will measure six inches in diameter. I use muck. Last year I hauled three thousand two hundred wagon loads, and I think it paid me. Last year I raised sixty-five thousand La Conte pear-cuttings. It has certainly been a wonderful success with me. I have some sixty-five acres of fruit trees, and I have been seven years making this grove. I do believe the orange growers, and fruit raisers generally, have thrown away thousands of dollars yearly on commercial fertilizer. I do believe that muck is a great, good thing, and I believe it will make a good compost with stable manure.

Mr. Healy.- I believe I can say that I have some of the best land in Florida for growing oranges. I use about four hundred carts of compost each year. I have never used any muck on my orange trees; I put it on my vegetables, but never on an orange tree. I put plenty of cottonseed meal with it. I know the muck which I have is a good article. Where you put it down you have got immense lumps all through your grove in a short while, as soon as it becomes dry, and causes your land to dry out. I think there is a great deal of good in muck; that is, if you put a sufficient quantity of fertilizer with it; but still, somehow, I do not believe in putting it on my grove. Having some trees which were looking very badly, I hauled out a load of this muck and dropped it on the ground near those trees, intending that

the muck, which was so fine, should bring them out; but it did not do it. I believe that, in our South Florida sand, muck is not the proper thing to use. In the matter of soft phosphate, I think that is a very important matter. I was in the same grove that Mr. Bielby speaks of, and I could not help but notice the marked difference in the trees--those which had soft phosphate and those which were fertilized with commercial fertilizer. This soft phosphate was put on the upper side of the grove, which is rather hilly, and there could be no possibility of any of the commercial fertilizer being there, and it was much the best. This was a very small experiment to start with, of course, but still it was something. The phosphate was put on in October, and this was March, about which Mr. Bielby speaks of. I believe that we can buy this soft phosphate and compost it and get just the kind of fertilizer we want. I think it is a good substitute for bone. Col. Harvey says that muck acts well on his pear and peach trees; possibly that may be, but it will not act well on an orange tree.

Mr. Woodworth.- Possibly Major Healy's trouble with muck is that he spoils it before he puts it in the ground. Now, I know of groves where there is muck put to each tree, and you dig as deep as you can, to the roots of the tree, and you will find no chunks of muck. I have been hauling muck for seventeen years, and I have always found it satisfactory. I find that nearly all the objections which have been brought against muck are by those who have not handled it properly.

Mr. Mott.- In regard to cow manure, chemists tell us that one thousand pounds of cow manure contains eight hundred and two pounds of water, four and one-half pounds of bone, five and one-half pounds of phospheric acid, but he does not tell us what the rest is. Well, it is simply humus. I think there are mucks which are nearly equal to cow manure in fertility. I am a believer in muck.

Mr. Delano.- I move, Mr. President, that we adjourn until nine o'clock A. M. to-morrow.

Adopted.

SECOND DAY, WEDNESDAY, MAY 4, 1892.

MORNING SESSION 9 A. M.

All night by boat, rail and teams there has been a constant inflow of members, representing every part of the State from Dade to Escambia. The Hotel Coquina is full to overflowing, the hotel and private houses in city across the bridge are in the same condition, but the Ormond, which had been closed for the season, kindly re-opened its doors and cared for the overflow. Every seat in the large hall was occupied by this body of the most thoughtful and progressive of horticulturists in the State, when, at 9 o'clock, the president's gavel fell. The president announced the regular order to be the report of the committee on peaches.

G. L. TABER, Chairman.

REPORT ON PEACHES AND PLUMS.

Mr. President, and Members of State Horticultural Society:-

The individual members of your committee on peaches and plums have thought best to make separate reports, in accordance with your permission. My report will cover more particularly the Northern section of the State, in which are located my own orchards, being situated at Glen St. Mary, in Baker county.

Last season was a prosperous one for the peach growers in that locality, the crop being a good one, and selling readily at remunerative prices.

In my youngest orchard, individual trees which had been set out only sixteen months yielded a sufficient income to pay for the trees, their culture during the meantime and the ground upon which they were planted.

The varieties that yielded the best, both in crop and prices, were Waldo, Angel and Bidwell's late, and right here I wish to say that for general planting in Florida this is a trio of varieties that I consider hard to beat. They ripen in the order named, and all belong to the peen-to type. In mentioning the peen-to as the type to which these (and many other) varieties belong, I trust that none of my hearers will confound the fruit of these improved varieties as being identified in shape with that of the peen-to; on the contrary, all the best varieties that have originated from the peen-to seed are of regular peach shape - round or roundish oblong.

Last year I brought into bearing some three hundred trees from Peento-seed, many of which, while bearing fruit of good quality, were so near a reproduction of Maggie, Yum Yum, Bidwell's early, and other named varieties of this type, that there was only one of them which I deemed sufficiently distinct from or possessed of superior advantages over the named kinds, to warrant testing further. I have, therefore, budded all of these trees this Spring to other varieties, with the exception of the one tree above noted. I merely mention this fact to show the labor and expense involved in trying to originate new varieties. In the case above mentioned the number of varieties deemed worthy of a name and introduction averages just about 1-3 of 1 per cent.

In another lot, however, I have prospects of a better percentage of valuable new varieties. This last-named plot is composed of trees of the honey type, the seed that was planted being two generations removed from the parent honey, i.e., seedlings from seedling of the honey, in which the parent seedling had already made an improvement on its parent - honey. The two hundred trees of this class that I brought into fruiting last year showed some remarkably fine fruit, and out of these, eleven trees were marked with numbers as worthy of further careful watching for future results. A noticeable feature about many

of these seedlings of honey type was the very apparent crosses that had been made with Indian peaches of the Spanish type. These Indian peaches are generally quite acid, but in the cross with the honey seedlings the two extremes of too much acid, and, to some tastes, too much sweet, seem to have been happily blended. Several of these are of large size and blood-red to the stone, the juice of them staining one's hands like red wine.

During the past few years we have seen much written about the deficiency of potash in Florida soil, and I wish to add my testimony in the same direction. Last year I made an application of about two pounds of sulphate of potash to the tree in a peach orchard in which nursery trees were growing between the orchard rows for the second successive year. The application was not made to the entire surface of the orchard, but was confined to about five feet from the tree one way (the way the nursery rows ran), and covered the ground the other way between the spaces in the rows of orchard trees. The result was a surprise even to myself, and notwithstanding this was the only application the trees received, they made the best growth during the Summer that I have ever had trees attain, and they brought to perfect maturity the finest crop of peaches that I have ever produced on trees of the same age.

Rather an amusing thing in this connection was two remarks made by one of my men who had been with me several years, and had become well acquainted with the virtues of complete commercial fertilizers. The first remark was to another one of my men (and which I accidentally overheard) at the time they were making the application of potash in the Spring, and was to the effect that instead of "that stuff," Mr. Taber ought to give these trees at least five pounds of a complete commercial fertilizer to the tree to promote a sufficient amount of wood growth in addition to maturing the large crop of fruit. The other remark, made by the same man in the Fall, was in reply to my comment on the wonderful growth these trees had made during the Summer, and was <u>verbatim</u>

as follows: "Yes, more than was good for them." Please do not infer from the above that I am making a general plea for potash over a complete fertilizer. That is not the idea at all, but rather that our applications of commercial fertilizer can sometimes be very properly and profitably supplemented by an application of sulphate of potash.

Peaches on Marianna plum roots.- During the past few years there has been more or less demand for peaches on Marianna plum stocks, but I am still of the opinion, which I believe was the universal consensus of opinion expressed by this society at its meeting at DeLand two years ago, that peaches on plum roots are not a general success in Florida. I have had occasion to grow some trees in this manner for parties who contracted for them to be grown in this way, and will say that nearly or quite one-half of the trees thus grown died in the nursery rows after the peach buds had made a growth of from one to three feet. On each side of these rows (within four feet of them) were plums budded on the same stock - Marianna - at the same time, the plums on plum stock showed absolutely no loss - every bud that started to grow went ahead and made a tree. Now, will some one tell me why, if the plum stock is a suitable one for peaches, the buds after growing a foot or more fail up in this manner? I have noted above that the plum on plum stock shows no loss, and will also say that the peach on peach stock shows no loss from dying after the buds have started. There have been a large number of trees, peaches on Marianna, planted in Florida, but as nearly as I can learn the results have not been generally satisfactory, the trees mostly failing up in from one to three years after being planted. There are, of course, exceptions to this as well as everything else, but I think it will be found that the trees which have succeeded were either budded very close to the ground or root-grafted and planted deep enough to cover the union of peach and plum, and that roots have thrown out from the peach stock above the union.

One point that should be carefully considered in planting a peach orchard is to procure the trees from a locality known to be free from peach yellows. At present there is no known case of this disease in this State, although very prevalent in States to the north of us and gradually working southwards. Referring to the investigations of this disease, I quote from the United States agricultural report of 1890, under the division of vegetable pathology, as follows: "This work (investigation of yellows) has been prosecuted continuously since early Spring, in Delaware, Maryland, Georgia, Michigan and Kansas. Additional bud inoculations have been made, and some further light has been obtained from both the new and old experiments. The results of this part of the investigation will be published as a separate bulletin. They may be summarized as follows:

1. The disease can be conveyed to healthy trees by the insertion of diseased buds. Additional proof of this has been obtained.

2. It may also be conveyed by the use of buds which appear to be perfectly healthy, but which have been taken from trees showing yellows on other branches. The difference in this case is that the disease does not manifest itself so quickly.

3. An additional experiment will be undertaken, on a large scale, to determine whether the disease may also be communicated by buds cut from trees which seem to be perfectly healthy in all parts, but which stand in orchards where the disease prevails, i. e., to determine whether the disease has a long period of incubation, as begins to seem probable."

There are a large number of peach trees annually sold in this State by unscrupulous dealers and tree peddlers, that are bought by them from the cheapest sources at which they can be obtained, regardless of whether the section of country in which they are grown is infested with yellows or not, and if the yellows can be introduced into our State, it looks as if we would not have long to wait long for its introduction, unless more care is taken in this respect.

California has heretofore used vast quantities of peach stock grown in the Eastern States, but owing to the increasing prevalence of yellows in the Atlantic Coast States, she has now entirely prohibited the importation of peach stock from any of the Eastern States, without even making any discrimination between them. If the fruit interests of California demand the prohibition of Eastern grown peach trees on account of yellows, it certainly looks as if such sections of these Eastern States as are at present free from this disease, should exercise a great deal of care against purchasing trees from districts known to be infected. As I believe that Mr. Swingle expects to be present at the meeting in the capacity of representing the division of vegetable pathology of the United States department of irrigation, I trust we shall hear from him as to whether, in his opinion, this disease will thrive this far South (one or two noted writers, including Thomas Meehan, claim it will not.) We shall also be interested in hearing from Mr. Swingle as to difference between yellows and peach rosette, and the damage done by the latter disease in Northern Georgia.

Referring again to the profits, or otherwise, of peach growing in Florida, much has been written, during the past season, to show the pros and cons of the subject, and a review of these articles as they appear in the files of the horticultural papers of this State, makes very interesting reading. There is one point that too many of our growers seem to have lost sight of, and that is that the peach is a very perishable fruit, and must, to prove profitable, be treated as such. The necessity for careful sorting and packing is not generally recognised to the extent that it should be, but even where this necessity has been recognised to its utmost, and the fruit put up in strictly first-class shape, the growers have, in many instances, persisted in shipping the fruit by freight, on the score that express rates are too high. I admit the express rates are high, but I will say that even if they were half as high again as they now are, I should continue to ship all of my peaches by all-rail express in preference to any method of shipment by freight that we now possess. There are plenty of instances that could be quoted, corroborative of my own experience in this direction, but I shall mention only two of them, both of which are given in the Florida

Dispatch, Farmer and Fruit Grower of July 30, 1891.

One of these is an article written by Mr. C. R. Skinner, of Fellowship, Fla., headed "Failure in Shipping Peaches," in which, after describing the careful manner in which they were packed, Mr. Skinner says: "They were contributed to the tender mercies of the Coast Despatch, and were a long time in transit." He then goes on to give the net returns of each shipment, and after figuring up the expenses of picking and packing, makes the results as: "Total loss over and above letting them rot on the trees, $5.48. The very next article in the same paper is headed "Success in Shipping Peaches," and is written by Mr. O. C. Knox, of Highland, Fla., the gist of which is contained in the following sentence: "From these nineteen trees we picked about forty bushels, and only one small lot--three crates--sold for less than $6 per half bushel crates." Immediately under this article and commenting on it, the editor says: "We saw two of Mr. Knox's returns, the prices received were the same in both--$6 per half bushel crate. Eight crates shipped June 17th and 18th, sold for $48; freight charges $11.60; commission $4.80, making $16.40, leaving a net return of $31.60 or $7.90 a bushel, net. His forty bushels, therefore, netted him over $300." Again, in the editorial column of the same issue, the editor makes the following pertinent remarks, which fully elaborate the points I wish to make: "On another page we present two letters, giving very different results reached by two growers in shipping peaches. One shipped the peen-to and the honey, which are very fine fruit, but difficult to ship, and both of which have been practically discarded as market peaches by most growers in Northern Florida. The other shipped a seedling of the peen-to, a delicious peach, and not so difficult to ship as its parent.

The first sent his fruit over the Atlantic Coast Despatch, nominal time four days, actual time often seven days, charges about 75 cents a bushel. The other shipped by express, time about two days or less, charges about $3.85 a bushel. Yet the shipper who paid these enormous charges made money handsomely, because his fruit

arrived in such fine condition that it sold for $12 a bushel, while the other actually lost money. Both shippers appear to have packed their fruit well. Surely such facts do not require much comment."

Plums.- As a general thing, the varieties of plums of Chickasaw type do not fruit very well this far south, and there are but few of this type that I would recommend planting extensively in Florida. The golden beauty, although of somewhat recent introduction, has so far proved to be better adapted to Florida than any other variety of this type. It is a fine plum, and has so far succeeded admirably in North Florida.

Of the Japan type, many varieties have been successfully fruited in the State, and the fruit of Kelsey (the variety that has been planted more largely than any other) has brought very fine prices. Mr. John Fabyan, of Conant, Lake county, informs me that he obtained $8 per bushel at auction in New York, although they were shipped while yet green and hard. The Burbank is a variety that promises to compete with Kelsey for first place among plum growers in Florida, and, in fact, is gaining a wide reputation all through the Eastern States. It is a much later bloomer than Kelsey, hence quite free from danger from late frosts. The fruit is very handsome and possesses an unusually thick, leathery skin, and consequently is less subject to damage from curculio than most varieties.

Several years ago, I planted quite a number of seeds from the Kelsey, and have brought into fruiting about a dozen trees from the seed thus planted. The most noticeable thing about the appearance of these trees, is their almost entire lack of resemblance to either the parent Kelsey or to other named varieties of the Japan type. Not only this, but they vary a great deal between themselves, hardly two of them having the same character of growth, and the fruit on no two of them being alike. It was from one of these seedlings that I obtained more fruit last season than from any other Plum, of any variety, on my place. The fruit is large (but not as large as Kelsey), round -- 1-2 inches in diameter-- color, reddish purple, with heavy blue bloom; flesh, sweet,

melting, juicy, and of excellent quality. Ripens early in June. The tree is a very strong grower, symmetrical and handsome. I have named it "Excelsior" and believe it to be an acquisition. From the wonderful diversity in character of growth, but generally good fruit obtained from these dozen Kelsey seedling, I believe it will be interesting to those who can do so, to plant seed of any of the fine varieties of the Japan type, and it is more than likely that other valuable varieties might be originated. Of course, orchards planted for commercial purposes (either of plums or other fruit) should be confined to trees of well tested varieties, but in addition to the commercial character of our pursuit, it seems to me that the annual planting of a few carefully selected seed, and the bringing into existence of absolutely new and distinct varieties, possesses a charm that no true lover of horticulture can deny.

C. L. TABER

President.- Mr. C. P. Lund, of Daytona, is the next member on the committee; would like to hear from Mr. Lund, if he is present.

Mr. Lund.- After Mr. Taber has made such a complete report, I do not think I have anything to say. The peen-to I consider the best peach of them all for ordinary purposes. I have never shipped any, and therefore do not know anything about shipping or marketing. I sell nearly all of mine in Daytona. With good culture and plenty of fertiliser, I have no trouble in raising peaches. The other trees do not hold as well as the peen-to.

Mr. Bacon.- How many bushels did you have last year?

Mr. Lund.- I only had a little over half an acre planted,--the trees being from two ro three years from planting,--and I had about 100 bushels of peaches. These netted me about $3 per bushel. Another good peach which I have is Bidwell's late; I consider Bidwell's late, for home purposes, better than Bidwell's early. Bidwell's late is the best quality.

I do not like Bidwell's early, except that it is an early peach.

President.- Is Mr. Pugsley present?

Mr. Pugsley.- I suppose that failures as well as successes should be introduced into this discussion. I cannot say that I have made a financial success of the raising of peaches. As I have never had any experience with the better varieties, my report cannot be of much value. I have always found one great trouble in the raising of peaches, and that was the winter frosts. I have, year after year, lost my crop of peen-to-peaches. My trees have grown well; would consider that they have grown well, and present a satisfactory appearance. In regard to plums, the Kelsey has proven to be the best with me. I have trees which seem to be perfectly adapted to the wild stock. I have grafted the Marianna on the wild stock, but I do not yet know whether it is a success. I have only been experimenting with plums about two years. No other plums of the Chickasaw family have been satisfactory to me. There is one fruit which has not been mentioned here and which I am interested in, - that is the apricot. We have some, and our experience has been that the trees grew very well for a while, but they have died out of late. Our apricots grafted to wild trees have grown well. We have one variety which is very good. I mention this in order to draw out discussion, and hear what has been the results with any one here who may have had experience with this fruit.

President. - The matter is before you for consideration.

Mr. Taber. - I move that Mr. Swingle be invited to address us, representing the department at Washington.

Motion carried, and Mr. Swingle was invited to address us, representing the department at Washington.

Mr. Swingle. - I did not come prepared to talk specially on the subject, but I will speak briefly on

peach yellows and peach rosette. I cannot say that the peach yellows or peach rosettes will thrive in this climate; still, it is impossible to tell whether it will or not, so it is better to be on your guard against it. If it was once introduced, you could not stop it. As to the difference between peach yellows and rosette. In the peach yellows the disease is first manifested by the fruit prematurely ripening; this is always a sure sign; it may be two weeks, it maybe a month before it should ripen, but it never fails. The next year there is a peculiar growth, and the winter shoots which should remain dormant push through, and in a few years the tree is killed. In the rosettes there is no premature ripening; very little fruit ripens. The leaves all push together in a very small space, and form a rosette,- hence the name. This rosette remains very short, and other leaves continue to push up, and the tree is soon killed. I have counted 250 leaves in a space about one inch long. The peach rosette is comparatively a new disease, and is now found in central Georgia and some parts of Kansas. The rosette kills very much quicker than the yellows. The peach yellows are not known so far south; they are very bad in some parts of Virginia, in Delaware, Michigan, and New York. I think it would be well for you to take measures to keep out this stock which comes from those infested States, and not allow any fruit from them to come into Florida.

Mr. Taber. - I do not consider the apricot well adapted to this State. The tree will grow well for a short while, but that is all they will do. There is one variety which Mr. Von Luttichau has had under his notice for many years, which was very good. It was named the "Santa Fe.". I got some cuttings, and have been introducing it to some extent. As to almonds, don't plant at all.

Mr. Williams.- Mr. Lund, what kind of land are your trees planted on? Are you troubled with the root-knot?

Mr.Lund.- My peach orchard is not all on the same kind of soil. The most of it is on spruce-pine land, yellow sub-soil. In regard to rootknot, I was at first troubled with it. I do not think that with proper cultivation and fertilizer there is any danger from root-knot. I believe in clean culture.

Mr. Healy.- If it fruits well with him, why don't it do so with us? We have no fruit from the Kelsey.

Mr. Taber said Mr. Berkman had told him the Kelsey should not be cultivated, but let alone; if cultivated at all, it should be very little. He could give no other explanation to its failure to bear in South Florida. Put it on nothing but plum stock. Marianna is the best. Budded on peach, it may bear, and has borne abundantly, but the trees are not healthy; they die.

Mr. Taber.- In my experience, they will grow all right. The peach tree will also grow. I would like to hear from Mr. Fabyan.

Mr. Fabyan.- I have not had one tree die yet which was budded on peach root. They grow nicely, with the exception of the root-knot; our trees are on high pine land, yellow sub-soil. I tried clean culture, but when I shipped my fruit it did not go well. As for the root-knot, I can kill it with high-grade sulphate of potash. The larger the plum, I say the better is the quality. I find that the Kelsey plum budded on peach roots grows very well. Last year I did not do much with my fruit, in the way of marketing, although I gathered them when they showed a little red. I put my fruit in the Leslie fruit crate. They were reported to have been received in bad condition.

Mr. Bielby.- What kind of fertilizer do you use?

Mr. Fabyan. High-grade potash. I try to get all the money out of my trees that I can. I fertilize my trees with great care. I first use one measure of a commercial fertilizer, and then I put on high-grade potash.

Mr. Bacon.- I have had very little experience in raising plums, as a business. In regard to peaches, Mr. Lund has stated that he believes in clean culture; I would like to impress that upon the minds of the people. He advised me not to mulch my trees, but to give them frequent stirring up. Mr. Lund raised last year nearly one hundred bushels of peaches, and sold the greater part of them in Daytona. The market, of course, is the question. What is the use of raising peaches if you cannot sell them for something?

Mr. Phelps.- How many people in Daytona?

Mr. Bacon.- About 500. There are about 1,000 people in the Winter, and in the Summer about 500 or 600 people.

Mr. Wright.- In reference to growing Kelsey plums, it has been with me a failure. Five years ago I got some Kelsey plums. I planted about 100; out of that number I have had about eight or ten to fruit. I have now about twelve trees left alive. I planted about 1,500 peach trees at the same time. I have given my plum trees barn-yard fertilizer, and have finally got down to sulphate of potash. I fertilized my peach trees in the same way. In regard to the quality of peaches, I consider Bidwell's early as superior to Bidwell's late. The peen-to is one of the best. We got about $2 a bushel for our crop. I think the peach and the plum both need fertilizer. I have tried several other varieties besides those which I have just mentioned, and succeeded in getting but very little fruit from them. Now we are going to plant some more peaches, simply because we like the fruit, but we do not expect any money out of them to amount to anything.

Mr. Harvey.- Being the only and first representative that you have ever had from extreme West Florida, I think that I should give our experience in raising peaches and pears in our part of the State. We have planted, within the last few years, probably 20,000 acres of trees. The industry is largely increasing, and I venture to say, that in a few years the six

Western counties of Florida will ship many a thousand car-load of fruit of all kinds. I have had some experience in the peach business, some in the plum business, and considerable in the pear. I have about twenty-five acres of peach trees. I am within thirty-six hours by fast mail of Chicago. I believe that peach culture is one of the most profitable industries in Florida, and I think that this fact will be demonstrated before very long. I think the Burbank is the plum, and I believe the plum will beat the peach when we find out which is the better fruit. If you have young trees, put them out in such a manner as to get the most growth on them the first year that you possibly can. You must give them a rapid growth the first year, as I do think that of all necessary things in peach culture, pushing the tree the first year is the most essential and important. I have an orchard of eighteen acres. On the left of this orchard I left three rows of trees without fertilizer for the first year. The second and third years I put on plenty of fertilizer, and did everything in my power to make them grow and catch up with the others, but they would not do so, and I have never been able to do anything with them, and simply because of the stunted growth of the first year. In regard to packing fruit, the majority of shippers put their fruit in baskets. That is a mistake; fruit should be shipped in boxes, and not in baskets. A very good box is 4 x 11 1-2 x 20 inches. It holds the fruit well, and makes a handsome appearance. I acquired this experience in the fruit markets of New York, Chicago and the West. I am fully satisfied, after a full examination, that the Burbank is the best. The Kelsey is a finer fruit, but it does not make a fine display alongside California fruit. We have one great advantage over California, which a great many do not appreciate, that is, they have to pick their fruit from twelve to fourteen days before it is in market, while we have only to pick three days in advance. I have the root-knot on my trees, but I do not think that it does them any harm at all. I would say right here, in regard to peaches,-

raise your peach trees with the idea of getting all the fruit you can off of them for two or three years, and then be satisfied. I can make a tree grow so that it will carry five bushels in three years. These rapid growing trees are going to be the best trees and the most profitable.

Mr. Bielby.- I move that we proceed to the consideration of the next subject, which is that of strawberries and miscellaneous fruits.

Motion adopted.

Mr. Anderson.- After this subject comes the report of a committee on a very important matter, that of marketing, and I move, Mr. President, that we shorten the time of this report.

Mr. Bielby.- We now have one hour and forty-five minutes before 12:30 o'clock. I move, Mr. President, that we devote forty-five minutes to this subject, and one hour to that of marketing.

Motion adopted.

REPORT OF COMMITTEE ON MISCELLANEOUS FRUITS

(Exhibit K)

To the President and Members of the Florida State Horticultural Society:--

Of the Strawberry -- Fragaria Vesca.

From Decandolle Cultivated Plants, I copy: "Our common Strawberry is one of the most widely diffused plants. It grows wild in Europe, from Lapland and the Shetland Isles to the mountain ranges in the South: in Madeira, Spain, Sicily, and in Greece. It is also found in Asia, from Armania and the north of Syria to Dakuria. It is wild in Iceland, in the northeast of the United States -- round Fort Cumberland and on the northwest coast.

The Greeks and Romans did not cultivate the strawberry. Its cultivation, probably, was introduced in the fifteenth and sixteenth centuries."

There seems to be two families of the wild strawberry: Virginiana strawberry -- Fragaria Virginiana, and Chili strawberry -- Fragaria Chilocusis. Decandolle remarks of the latter: "The large size of the berry and its excellent flavor, have produced by different crossings, especially with the Virginiana, the highly prized varieties."

In all the northern sections of our country it ripens its fruit at a season of the year when there are no other fresh fruits, in the spring; at a time that our tastes, our systems are just in condition, that our relish is most keen and systems require just that blending of fruit acids and sugar we find so delicately blended in the strawberry.

Not so with us here in Florida. But, is it not true of the other fruits, so many of which we would very much dislike to do without. Is it not at the head of the list here? And we have it from January until May. Four months, and it sometimes is extended to six months of the year, this luscious, healthgiving fruit greets us on our tables, with its pretty red color and pleasing aroma.

Of its culture. With us here, in this lower part of the State, often I find it quite difficult. It is one of our plants whose roots do not go very deep into the soil, and with its great, large leaves and dense foliage it requires much moisture, which it often fails to get in our drouthy seasons, and with the common cultivator they are grown with more or less difficulty.

## Varieties to Plant.

Here is where comes many failures. The new beginner seems to think a strawberry is a strawberry everywhere. Well, they are; but all kinds do not do the same in different sections.

Like all other plants there is an adaptability to our soil and climate that must not be overlooked. Many of our favorites that we are familiar with in our old homes, are of no value here, for want of naturalization.

When I first came to Florida, I brought with me five of my best varieties for the section I was growing them in, all of which were thrown away for the Nconan, and it is a question with me now, whether, of the many new varieties that have their advocates, and are being more or less used, the old Nconan is not our best in this portion where the culture is more difficult than farther north in the State. I believe it is a more hardy plant, and better for those who want strawberries of their own raising than any other.

Our drouthy season gives the enemy of the strawberry free sway. His name is legion, and right well do they improve the opportunity to raise their numerous families, which live like all parasites--at the expense of the life of others. There are grub worms, cut worms and wire worms in the ground that eat off the roots before we know it. The crickets get in among the leaves and play sad havoc and there are hoppers without name, that unless we can in some way prevent, will live from off our substance.

## Location.

Here we get bothered again. If the season is to be a dry one, a level, naturally moist plot of ground should be selected, and three months before we intend to plant, we should get ready for the worms that have their hiding places in the ground, by sowing broadcast 200 or 250 pounds of common salt to the acre. Again, a month or more before we are to plant, the ground should be made rich with some kind of manure that has plenty of ammonia in it. Cow dung, stable manure, blood, and bone or cotton seed meal, well worked into the soil and left there long enough that its carbonic acid is gone, or it will burn up the plants.

The beginner more often has a deal of trouble to procure his plants. He follows some advertisement, selecting cheap plants, that are cheap with its full force of meaning; plants that have come from the old beds, that have had no manure or culture since the crop was taken off, and they are little weak fellows at best, and handle them as carefully as you may, they are poor plants, and but few will grow. Usually they are taken up, all the leaves left on, which, if they are packed wet, will heat and are killed; and if they are not packed wet, will dry out and die.

Plants should be grown purposely for new plantations, kept thinned out, well fertilized, and not sent out until they are strong and vigorous. When taken up, but few should be taken at one time. The operator should take them to some spot in the shade, out of the wind, and plants trimmed, as I tell my men, with just leaf enough left to keep track of them, roots straightened out, counted twenty-six in a bunch and tied, not very tightly, and it is best some wet earth be left in the bunch as it will adhere to the roots (I often wet the roots a little but never the leaves).

To pack them in for shipment, I like a handle basket, one that will hold one thousand plants, covering the bottom of the basket with well-wetted sphagnum moss. The plants are set upright on it, being pretty tightly pressed together so they will not dry out. Put up in this manner I have had them go for weeks safely.

Several days before we expect to plant, the ground should be put in perfect condition; if it is sand, I do not care how hardly and smoothly it is packed, and if there is not sufficient rains that the soil is wet, put off planting until there is, or haul water and wet it thoroughly.

I like to plant as early in the fall as practicable; as soon as plants are strong enough and ground is in condition. I like rows pretty well apart, so as to give room for culture and gathering

of the fruit. Rows three and one-half feet apart, and plants one foot in the row.

I have used a common spade to open a crack in the soil. The operator must needs be careful every time he inserts it to scrape away the dry sand, that it does not run down in with the plant. The planter should have some shallow dish with say one inch of water in it, in which the plants are kept, and taken from it only a few plants at a time, as they are wanted. If it is not a wet time, I have the third hand along with a bucket of water, and a pint is poured in as each plant goes in. The roots should reach their whole length into this opening made with the spade, the earth pressed firmly about the plant. If sun is hot it will pay to shade the plant until it forms roots, which it will, if in proper condition, within two days.

If it is not convenient to have the ground fertilized before planting, it may be done after plants are in, sown broadcast, being careful to keep it about six inches from the plants and working it well into the ground.

I would not use stable manure on newly set plants; and while the plant requires ammonia, be careful not to use too much at or near fruiting time, for if we do, there will be too much growth of plant and little fruit.

## Of Marketing.

Always be careful to closely sort out all small or in any way inferior fruit. I often make two grades, but never put them both in the same merchant's hands for sale.

Use neat pint or quart boxes (not baskets) never more than sixteen quarts in a crate, and there is one thing it cost me lots of money to learn, and that is, that the nearer we can put up any soft fruit, so it does not come in direct contact with the air, the better.

I want lots of ventilation about the crate, but I want that nailed up tightly.

Respectfully submitted,

James Mott

Mr. Woodworth.- You say, put the roots down the whole length. Do you never trim them when they are very long?

Mr. Mott.- Yes sir, I sometimes cut them. I would not cut them back to four inches, but I would leave them about eight inches long. I want to get them well down in the ground.

President.- Is Dr. Moody or Mr. Spencer present? The other members of the committee not being here, the matter is before you for consideration.

Mr. Phelps.- I grow strawberries for my own eating, but not for market, although I consider them the easiest growing plant in Florida. I have been troubled with the spotted pariar, about which I would like to ask Mr. Swingle. Before I plant my strawberries I use fertilizer. I put that on the soil first, then I work it up at least a foot deep. That is all the fertilizer it needs. These plants begin to get strong in December, when I put on a fertilizer composed of 40 per cent. of ammonia and 60 per cent. bone flour. I have seen the roots here in Florida go four feet deep. It is not an air plant, and no other plant is which bears like that. I got about seventeen bushels from a space of twenty-eight by fifty-six feet. The early Michael, I consider the best berry.

Mr. Crosby.- Has any one succeeded in raising them for more than one year?

Mr. Mott.- I have seen several varieties of the Dewberry. In regard to pineapples, I live in a pineapple section, near Orlando, and I suppose that

there have been at least 3,000 acres planted in the State in the last two or three years. T. H. Richards, who is known as the pineapple king, has about 50 acres in pines. His manner of planting is to put them pretty close together; this is done to support each other. The variety which he plants mostly is the queen. He plants 10,000 to the acre, and I judge from what I know that he gathers about 10,000 pines from the acre. When I was last at his place he had several new varieties, which he was testing, and he liked these new ones very well. He thinks a great deal of the smooth cayenne.

Rev. Mr. Harding.- How do you defend from the frost?

Mr. Mott.- By a shed.

Mr. Mead.- I would like to say that I have been raising the Cuthbert raspberry.

President.- I have here a report from Stephen Powers, and if there is no objection to this, it will be read.

(Exhibit L)

THE STRAWBERRY INDUSTRY IN BRADFORD COUNTY

Mr. President, and Members of State Horticultural Society:-

A third successive unfavorable season has just come to a close, and if it was not for the high prices received for a good part of the season, the growers would be rather disheartened. Drouth and frost conspired to prevent the perfection of a stand of plants and the formation of fruit on what plants were grown. But enough has been demonstrated to show that Florida growers have practically a monopoly of the markets of the country for a month or six weeks, and that if they can only find means to protect their crops against drouth and frost and can secure some reduction in transportation charges, they have an industry of substantial and enduring value.

## Irrigation.

Irrigation is imperative for the attainment of results of sufficient value to establish an industry worthy of the name. In the flatwoods of St. John's county the level is so near that of the sea that artesian wells are found to be available as a source of water supply, but the flat woods of Bradford county are so near the highest level of the peninsula that some other fountain head will have to be sought. Driven wells have been tried in places and found impracticable on account of the clay substratum or the occurrence of quicksand just below it. Near the dividing ridge of the peninsula the clay strata of Lawtey are disposed in successive layers, weatherboard fashion, and an abundant supply of water is frequently obtained on one of these strata, which are like a shingle roof with eighteen inches or two feet of sand lying upon them. One grower, beginning at the edge of one of these strata, "drifted" back on it which several surface ditches, in which he collected a supply of water and led it down between his strawberry beds.

## Storage of Water.

Further down from the central ridge of the peninsula the growers will have to collect water either in wooden tanks or in cisterns dug in the dense clay and walled up with brick or wood in the upper part, which passes through sand. The railroad tank at Baldwin is supplied from a cistern or well of this latter description. It is only twelve feet deep, but it supplies a plenty of water for the engines of two railroads in the driest weather.

## Culture on Sandy Soil.

The above mention of dense, heavy land for strawberries should not at all discourage the grower who wishes to raise a few beds for home use on high pine, though I could hardly recommend this class of land on which to grow berries in commercial quantities. Maj. Sidney Herbert, of Maitland, related to the

writer, with a high degree of satisfaction, his brilliant success in raising berries on very sandy land, simply by the copious application of water carried in buckets. The principal trouble on this kind of soil is to keep the plants alive through the summer. A thrifty, closely-planted row of corn, growing eight or ten feet high on each side of the bed, will preserve four or five rows of strawberry plants through the trying ordeal of the rainy season.

## Varieties.

Three new varieties, the Bessie, the Stevens and the Eureka, were treated at Lawtey the past season; but the plants rusted down badly and gave very unsatisfactory results. So far they have proved no acquisition. The old standards, the Numan, Cloud, Wilson and Hoffman for northern shipment and the Michel for very early berries and home use, still hold undisputed possession. The Michel can be shipped in cold weather, but not later than March 20th or 30th.

## Refrigerators.

So fragile a fruit as the strawberry cannot be successfully shipped North, except in cold weather, without the aid of ice. Very skillful picking and sorting and rapid transit, indeed, will enable berries to be shipped nearly to the end of April without ice, but there are very few growers who will exercise sufficient care to warrant this risk.

Refrigeration has been tried in boxes from the size of one bushel capacity up to those holding eight or ten or twenty bushels; the smaller ones are popularly known as "ponies," the very large ones, "elephants." The best judgment of the shippers is rather against both of these extreme sizes. The best results, in most cases, have been attained with a box holding from sixty-four up to one hundred and twenty quarts. The bushel box holds such a small body of ice that it quickly disappears, and the berries spoil in warm weather before they reach the Potomac.

About the best refrigerator yet tried, to my knowledge, is the E. S. Thomas patent. It is double walled, and the two walls have between them two thicknesses of building paper, which are kept apart by slats, forming an air space between the twl walls of about a half inch. The top is listed around the edge with a strip of felt to render it air tight. The main feature of the Thomas refrigerator is a central drip chamber or flue, three inches wide, reaching from the ice-pan down to the bottom of the box, and extending from one side of the box to the other. The ice-pan at the top of the box is four and one-half inches deep, which will admit a good sized solid slab of ice sawn from the block. The ice-pan has a slot across the middle of it, corresponding with the drip flue below; and at the bottom of the latter there are two holes covered with sponge to prevent the water from escaping and prevent the ingress of air.

The advantage of this central drip flue is that it conveys a draft of air right down through the middle of the body of berries, and cools them off quickly when they come in from the field full of the sun heat.

When strongly made, these refrigerators have given general satisfaction; but as at present constructed they are too frail, and the life of a box does not generally extend much beyond one season.

All the other refrigerators, great and small, are made substantially on the same principle--an ice-pan in the top extending over the whole body of the berries, with the drip issuing at the side of the box, and not in the bottom, as in the Thomas patent. The objection to the very small ones is that they hold too little ice, and to the very large ones that they hold too much fruit, and, unless they are very thoroughly iced, the top layers will spoil. The railroad men dislike them on account of their ponderous weight, while the very small ones are very

apt to be thrown on their sides or bottom-side up.

Stephen Powers.

President.- The next report which we have is the one on marketing, Mr. E. Bean, Chairman.

Mr. Bean.- Our committee regrets that more time has not been taken by us for such an important thing as this report. Under the circumstances, we beg to offer the following:

MARKETING FRUIT.

(Exhibit M)

Mr. President and Members of State Horticultural Society:-

Your committee on the Marketing of Fruits, beg to submit the following:

The devising of a system that shall successfully move out a product coming from an area extending over nearly the entire peninsula portion of the State, amounting to about four million of boxes of oranges, besides lemons, pineapples and other fruits, with a large probable increase in the near future, the whole of which (or the orange portion), must be disposed of during the six months extending from November to May, and a very large part during the months of November and December, is indeed a formidable undertaking, and one of which your committee have a full appreciation.

Your committee are advised that during the season just closing, about eighty-five per cent. of the whole product has been forwarded to the various markets, on consignment, for sale. Ten per cent. has passed through the Florida Fruit Exchange, and the remaining five per cent. has been sold by the growers themselves, either on the trees or free on board, and that these methods, with some slight variations of proportions, have prevailed since the development of the industry.

The results secured have been far from satisfactory. Indeed, they have demonstrated very conclusively that some better means must be developed, or that the value of the product will decline to a point below the cost of production. Under these methods, prices have fallen from $2.50 to $2.75 per box for oranges on the trees in 1880 and 1881, to less than an average of fifty cents in 1891 and 1892.

If this rapid decline is to continue, it will not require great mathematical ability to figure out the length of time that shall elapse before the bottom shall fall completely out. Some portion of this decline may justly be attributed to the largely increased production, but only a small portion, for it is a well admitted fact that the increased consumption has grown in about equal proportion.

The eating of tropical fruit has vastly increased in the last twenty years. Then they were regarded as luxuries, to be used sparingly, now they have become regular articles of diet, necessary for health and comfort.

In the judgment of your committee, this large decrease in value is mostly directly attributable to the faulty and unbusiness-like methods prevailing for its distribution and sale.

It is forwarded at the caprice of the owner to distant markets, of which he has little or no knowledge of their requirements or condition, to parties of whose financial business ability and integrity he is absolutely ignorant, thus placing the results of his labor for years, in the hands of utter strangers, to dispose of without limitation or control. Is it possible to conceive of greater folly? He would not for a moment listen to a proposition to dispose of other property by the same methods. An orange grower would run a man off from his place, who should come soliciting him to send his horse or mule to New York or Philadelphia to sell on commission, and yet he will, without hesitation, send a thousand boxes of oranges that should be worth $1,500, to be disposed of as the receiver sees fit.

It is not the purpose of your committee to attack the personnel of the men to whom this product is sent. In the main, they are as honorable and upright as those engaged in other lines of trust, but it is the system, which is open to severe criticism.

The commission men have two distinct objects to obtain. They must first secure the consignments, and must then have the means of promptly disposing of them; it must have the trade. They cannot handle large amounts of perishable goods, unless they have the customers ready to take them. They must, therefore, sell them at the lowest possible prices, at which such goods can be bought, the only check being, that if they sell at too low a price, they may lose the consignor in consequence. Surrounded as they are by numerous competitors, having goods at their command, in which their only interest is the amount of the commission, it is not strange that frequent low prices have to be accepted in order to hold a valued customer, and it is comparitively easy to report to the consignor, that the lot was a little off, a little wasty, and if the grower complained, he can truthfully say, that they obtained all they could, and have sent the full amount, less express and commission.

It can be readily seen that such a system is not calculated to enhance the value of a given product, and so long as at present so, no improvement may be expected. Great efforts have been made to prevent the threatened disaster by organization, justly reasoning that if this great production could be controlled and passed through one channel, it would solve the problem, but with it coming from twelve thousand to fifteen thousand individual growers, with their diversified interest and opinions, each one of which has been for himself, first, last and altogether, organization has not a prospect.

The Fruit Exchange, with all of its advantages and facilities, has never been able to secure more than a beggarly ten per cent. of the whole amount, and consequently has not been able to accomplish the purpose for which it was created. The burning question then is, what shall be done to rescue from entire destruction, this great industry. Your committee emphatically reply, go back to business principles. It is a settled economic truth, that a producer has no right to be a speculator. Sell your fruit at home to best possible advantage, and give your attention to make better fruit, and more of it. Let the buyer wrestle with all of these questions of the transportation and sale. If they get their money in it, they will turn every stone to get it out with a profit. The grower will naturally inquire, with a sale of but five per cent, of the last season's fruit at home, how are we going to get the buyers here? Your committee would reply, that if you do not ship it out, that the buyers will come. This fruit has a fixed place in the market; the people want it, and the trade must have it, and if they understand that they must buy it, if they are to have it, they will surely come; as soon as this shall be understood capital will be supplied, large packing houses erected, and the business will take shape here, as it has elsewhere.

In the judgment of your committee, this is a matter entirely within the control of the producer, but it must be by general consent. If a considerable portion is sent out for sale, the buyer will not have the confidence to come, for no man or men can meet a consignment competition. Numbers have tried, including the chairman of your committee, and all, without exception have come to grief, more or less poignant. It must be either a sale at home, or a consignment and sale abroad. The latter has had fifteen years, with failure all along the road. Would it not be well, therefore, to try the former? Your committee are of the firm opinion that the business would improve at once, with this method in vogue. All fears of over-production would be groundless, and disappear.

Your committee will add, that of all the orange producing districts, either at home or abroad, Florida is the only one that attempts to market its products by sending it out on consignment. In Italy, Spain, the Azores, Brazil, Jamaica, Havana, Mexico, California and Louisiana, the crop is sold to dealers, who manipulate to meet their various requirements. In view of the dismal and costly failure which we have made, it is now time for us to join the procession.

E. Bean.

Mr. Sampson (of the committee).- Iam one of that committee, but I think the report just read covers the ground fully, so far as I know. We will have to sell our fruit at home.

Mr. Brady.- I have listened with much interest to what has been stated by the committee. But it seems to me that to adopt such a plan would cause a competition among the fruit growers to get rid of their fruit, which would prove about as detrimental as the objection which is now being made, that of commission men trying to get rid of it. It seems to me that the principle of handling fruit ought to be that of putting it into the hands of the consumer at the earliest possible moment. I belong to the Exchange, and I will say for them that they certainly make returns for what fruit they have received. The Exchange, of course, is selling on commission. I think, sir, that the Exchange has been able to accomplish a great deal when they have got fully as much for fruit as the commission men who handled 85 per cent. of the whole crop, while the Exchange only had about 10 per cent. The consignment system has a tendency to depress prices, while on the other hand the Exchange system causes prices to rise on fruit. I believe, sir, that with the latter system we could get 50 per cent. more for our oranges.

Mr. Bean.- Gentlemen, what you have got to do is to hold your fruit and not ship a box; when the commission men find that they have either got to come down here and buy the fruit, or go out of their business, they will come. One reason the Exchange has not done better is because they have only handled about 10 per cent. of the crop; the gentlemen say

there is an improvement: Well! fortunately I have sold my orange grove, still my whole interests are centered in the orange. It is just as much in advancement of my interests that it should succeed as any other man's. I believe, sir, that the way to do it is to wait, and the commission man will come down here.

Mr. Gaitskill.- If a man depends upon his orange grove for his living and cannot wait, then what will you do?

Mr. Bean.- In the near future, if this should be entered upon, capital will come here just for the purpose of buying this fruit. A man who cannot wait can sell part of his oranges in advance, and get enough to keep himself provided for.

Mr. Gaitskill.- I was in hopes that Mr. Bean would say, "Go to the Exchange, the Fruit Exchange."

Mr. Bean.- If the growers would sustain it, I would say, "Amen," but they will not do so. They, the Fruit Exchange, have never handled more than 10 per cent of the crop. Will you let the buyers stay at home and send them the fruit, or will you keep your fruit and make the buyers come?

Mr. Gaitskill.- I have tried the Exchange and the commission merchants for some time together, about three years; shipped some fruit to one and some to the other. The Exchange has got me more money than any commission house I ever sent fruit to.

Mr. King.- Selling at home is the best plan, but how are you going to make them sell at home?

Mr. Bean.- Just sit still, and let the buyers come; there is a demand for this fruit. The duty of this proposed system would be to create public sentiment. If all the growers would adopt this, I think it could be made a success, and a great deal accomplished.

Mr. Healy.- We are going to get concentrated action very soon. The growers have not paid for their boxes and fertilizers, which they bought last year, and this year nobody is going to sell any boxes at all;

when that time comes, they will come together of their own accord. I believe the Exchange was a move in the right direction. There is one thing which is going to make you organize, the name of that is "interest on mortgage," and it is going to make you do what has been vainly tried before. It seems to me the Fruit Exchange is the best method.

Mr. Phelps.- I want to bear witness to the great good which Mr. Bean has been to the people of Florida. He made the reputation of Florida oranges.

Mr. Brady.- I am one of those men who cannot wait. I do not know what to do. A man came to me some time ago and offered me $1.25 for my oranges, and afterwards, in conversation, he found out that I was a member of the Florida Fruit Exchange, when he offered me $2.25. Mr. Bean is in favor of selling at home. Those men who want to invest $25,000, will do so. You sit down and wait; they send down twenty agents, perhaps; those agents buy from one grove, but probably will not go to the next one. They will buy oranges at a very low figure. Then the agent is going to sit down, and ask the grower to come to him.

Mr. Delano.- I have nothing to say against the Fruit Exchange, except in regard to one thing. I do not believe in the auction method of selling fruit. Who ever heard of a large commercial house offering fruit in business centres? Who ever heard of an auction house saying, "Come here and get our fruit, and pay a big price for it." I believe that nearly all the members of the Fruit Exchange are honest and good men. The fruit Exchange ships to other places, and there the fruit is sold. The agent at that place may be the auctioneer himself, but at times he has to bid in the fruit. Mr. Ripley said that he was obliged often to buy in the fruit at the Exchange sales, to keep it from being sacrificed.

Mr. Beilby.- You must be mistaken.

Mr. Delano.- I told Mr. Ripley that I had heard the statement made that the agents of the Fruit Exchange sometimes bid on fruit. He said "I do occasionally." Then I asked him how much did he bid on; he said, "Two or three hundred boxes, at times." Major Rocks was with us at the time.

Major Rooks.- You are certainly mistaken. I shall insist upon an explanation. You had stated that Mr. Ripley would sell on commission; I inquired, "Do you ever sell from the Exchange and buy it in yourself? And he told me that he did not.

Mr. Delano.- I can readily see that Mr. Rooks was not present at the time about which I am speaking. Mr. Ripley said, "I did so to keep the oranges from being sacrificed."

Mr. Bean.- Mr. Ripley buys lines of oranges undoubtedly from them. They are agents, but they bid them in the same as you would.

Mr. Delano.- The great trouble is "gluts." They will buy their oranges in at $1.40 and sell them for $2. I have got $2.50 for oranges in Syracuse, and only 40 cents in New York. I will say that I do not endorse the Fruit Exchange, because it does not distribute the fruit properly. I have nothing against the Fruit Exchange, except just their methods. If we organise, we can make the railroads give us cheaper transportation rates.

Mr. Bibby.- I rise to a point of order, Mr. President. Transportation comes tomorrow.

Mr. Sharpe. I am a member of the Florida Fruit Exchange. I sell some fruit through the Fruit Exchange, and some through commission houses. I have nothing to say about what the commission men gave me. I sent them 700 boxes, and have heard nothing from them. The question which is before us, is not so much whether it is to be sold through the commission or the auction system, but the organisation that will regulate the supply and demand. We generally get good prices for our fruit. Why? Because we get our fruit out late, and do not ship it until March and April, when there is no glut. The whole State would get good prices if there was a system for the supply and demand, and by which it could be regulated. As a grower, I would be willing to enter into any organisation which would be so general as to control the orange business of the State. The Fruit Exchange would do for us, if you would all only go into that and support it.

What I want to say and impress upon my fellow growers, is to get them to consent to one system. If all the growers of the State would say, "We will not ship a box of oranges," we know that the orange buyers would come to the State by the hundred, and they would bring into the State a great deal of money. We have got to form our ideas into one organization. I am now willing to go into any organization which would be universal. It must be so as to control both the supply and demand.

Mr. Bielby.- I do believe the ideal system is that of selling on the grove, but we are not going to come to any understanding about any organization by sitting down and waiting. We sit down, and then we will be at the mercy of the buyer. The only way in which we can reach any definite arrangement of this matter is by unanimity of action, which I have no doubt will come. There have been several things said about the Exchange. The Exchange has done more with its capital than any commission man; it has $7,000, and since the birth of the organization has done a total business of $4,000,000. It is possible that there is in Florida a fruit grower who thinks that their officers are making it simply an organization for"skinning" the orange grower, men who are prominent business men, of high moral standing. The Exchange has been in existence for seven years. It has been calling to the growers to send their fruit for them to sell, or sell at home. If the Fruit Exchange had had the proper support which in my estimation the fruit growers of this State should have given it, it would have been today prosperous, and selling a large amount of the oranges of this State, whereas, it now handles only about 10 per cent.

On motion, the society adjourned until 2 P.M.

AFTERNOON SESSION.- 2 P. M.

The attendance still increasing and interest in the proceedings unabated.

Meeting called to order by Mr. Geo. L. Taber, Vice-President.

Chairman.- President Adams was detained at the hotel, but requested me to call the meeting promptly at 2 o'clock.

Mr. Hubbard.- The committee to which President Adams' address was referred, report the following:

(EXHIBIT N.)

REPORT OF COMMITTEE ON PRESIDENT'S ADDRESS.

RESOLVED:- That the Florida State Horticultural Society express its thanks to President Adams for the ability and diligence he has displayed in promoting the growth and influence of the society, and also for the masterly presentation of the evils that depress the fruit industries, and remedies that are required to promote its growth, that are contained in his annual address.

E. S. HUBBARD.
C.F.A. BIELBY.
GEO.L. TABER.

It was moved and seconded that the report be accepted, carried.

(EXHIBIT N½)

MR. HUBBARD.- Your Auditing committee have examined the accounts of the secretary. We find them in good condition, and the books neatly and correctly kept.

(G.P.HALEY.
Committee. (EDWARD WINTER.
(E. S. HUBBARD.

Report adopted.
Moved that the society adjourn for ten minutes to give an opportunity to finish arranging exhibits; carried and recess taken.
President.- The first thing on the programme for this afternoon is the report of the committee on the citrus. Would like to hear from Mr. A. L. Duncan, chairman.

Mr. Duncan.- I do not feel competent to speak of anything except young trees.

REPORT ON CITRUS FRUITS.

(EXHIBIT O.)

Each member of our committee is to make an individual report, and I will confine myself to my own experience with young trees and groves.

We have had the best success, planting in December and January. In sections liable to injurious frosts, it might be best to plant in February. The trees should be well fertilized when set out, and after the work is done a basin about four feet in diameter should be formed about each, which will be found advantageous when watering the trees in Spring. This basin should be covered with mulching;

if no mulching can be had, then after each watering, dry soil should be used to prevent evaporation. As soon as the trees have become thoroughly established, cultivation should begin, and should be continued at frequent intervals until November, when at the last cultivation, they should be fertilized again, which will end the work for the first year. The cultivation for several years should be the same as that for the first year, no grass or weedsbeing allowed to grow within a considerable distance of the trees.

From the most thrifty trees, there will spring up the second year what we call a leading sprout, which may be allowed to branch at five or more feet from the ground, and after the branches have spread sufficiently to protect the trunk from the rays of the sun, the old top can be cut away, leaving the tree with a straight, single body, which is most desirable.

If the trunk be divided, pockets will form at the forks, in which water, leaves and dust will collect and make trouble; besides, single trunk trees are more readily sprayed or washed on the inside, and the fruit is more easily gathered.

As reported last year, buds on the rough lemon stock are more thrifty than those of any other; they also require less nitrogen. If a commercial fertilizer should contain 4 to 5 per cent. of ammonia for the sweet or sour orange or grape fruit tree, it should contain about 2 per cent. less for the rough lemon, which would be equal to a saving of $6 per ton. The mandarin is exceptionally thrifty on rough lemon stock. The use of this stock assures success in orange growing on pine land, which would be at least a doubtful experiment when any other stock is used.

During the past two or three years there has been an increased demand for what may be known as the Florida varieties of orange trees, such as Parson Brown, Non - pareil, Beach's No. 5, Higley's late, and Bessie. All of these varieties are vigorous growers, early bearers, and hold their fruit well, some of them until well on into the Summer.

Of the so-called improved varieties, Garey's Mediterranean Sweet has been proven more than worthless. The tree is a fairly good grower, a profuse bloomer, but drops or splits most of its fruit before maturity. What to do with these trees throughout Florida is a serious question. They promise so well every Spring that we are induced to manure and cultivate them another year, only to be disappointed again. Fortunately, they can be rebudded, and this should be done at once. We now know that there was no basis for the boom given this variety by nurserymen generally, five to eight years ago. The loss to Florida the past few seasons, on account of the failure of these trees to hold their fruit, has been very great. The introduction of the navels has also entailed immense loss upon our orange growers. This variety is a vigorous grower and free bloomer, but matures very little fruit. It is said to carry its fruit to maturity when budded on the rough lemon stock. This has not been verified in my own experience as yet, but we hope to substantiate the statement within two or three years. Perhaps irrigation is all that these two varieties require to make them fruitful. We are trying it ourselves, in a small way, this Spring.

If any one has made a successful experiment on this line in Florida, it would be gratifying to many to know it. A most experienced and successful orange grower said to me, eight years ago, that he never recommended a new variety until it had been proven worthy for a series of years on his own ground. This is a very safe rule, by which we should all be governed, for very few can afford to make these costly experiments on a large scale, which are sometimes almost ruinous. There are few discouragements equal to that of struggling for years to bring a grove into bearing, and just as one expects to realize the long look for fortune, to find our trees largely worthless, and that our only recourse is to rebud and wait another series of years before receiving satisfactory returns for our labors.

Of the imported varieties, Jaffa, Majorca, St. Michael Paper Rind St. Michael, Maltese Blood and Tardiff are excellent. Of these Jaffa, which probably stands first as to quality, is a rather shy bearer, as compared with the others.

Our experience in lemon growing, heretofore, has not been very encouraging, owing, in part at least, to our having the idea that this tree requires less manure than the orange, which is a mistake. Since we have been satisfied of this, and have acted upon it, the results have been more satisfactory. The fungus disease, or rust, which disfigures both the fruit and the foliage, can be largely if not wholly overcome by liberal fertilizing, thorough cultivation and frequent spraying with sulphur solution.

Respectfully submitted,
A. L. Duncan.

President.- The next member is Mr. A. H. Crane.

## VITALITY OF CITRUS FRUITS IN WITHSTANDING COLD.
(EXHIBIT P.)

Mr. President, and Members of the State Horticultural Society:-

That the citrus family is one of remarkable vigor and vitality, those of us who have passed so much of our time in its pleasant company are well aware. It will prove this vitality under neglect and starvation as well as in its recuperative powers after a freeze. It is well that in this latter point it has a limit, for even as it is, its extended and extending culture is enough to bring thoughtful consideration of future prospects.

This question of the vitality of the citrus in relation to capability of enduring cold is one which repeated reminders has led us to look upon as one for our earnest consideration.

After a severe cold, such as the freeze of '86 and '87, we find numerous reports as to this or that particular variety best resisting the cold, and from the diversity of opinion expressed, it would appear to be a proper subject for our discussion.

This diversity of opinion must be very confusing to new comers, while in truth such statements are simply facts, showing the varying conditions in which the several trees are found. If we accept as a fact the law that the vitality of the citrus in relation to capability of enduring cold, depends upon the condition of the sap of that individual tree, these apparently contradictory statements are at once harmonized.

This law applies to all the citrus family, and is the true reason why we find a lemon tree, perhaps unimpared, while a neighboring orange tree is badly hurt by frost, that one orange tree will be cut back, while the surrounding ones escape. The lemon scarcely stops its growth through the winter, neither does the lime, and both are much more liable to injury from cold than the orange tree, and yet, bud the lemon on the sour orange as a stock, and we have a tree nearly, if not quite as hardy as the stock on which it is worked, showing that the law holds good. And we have all noted how much more orange trees that are in bloom are injured by the cold, than those in which the sap was mostly dormand. This same law applies to other than the citrus family of trees and accounts for the fact of injury to Kaki, Japan chestnut, and other trees considered perfectly hardy, both here and further north. In illustration of which I note a water oak, nearly thirty feet high, in full growth, cut back by the spring frost of '90 as badly as an orange tree, in fact, it has not yet fully recovered. Also a native hickory, two inches in diameter, which in the same freeze was killed to the ground. And I also know of instances of citrus trifoliata being killed to the ground when in growth.

This law is of great importance to us in our choice of stock for budding - unless, indeed, we choose to use the sweet seedlings, and from its liability to disease, greater expense in gathering the crop, and generally acknowledged inferiority of fruit, it can hardly be used to the best profitand it is because of its habits of constant growth, that we would discard the lemon as a stock on which to work the orange.

While this is imperative in the northern portion of the orange belt, it is also desirable for the southerner; for while the lemon stock may make a more productive orange tree, the earlier flow of

sap in the lemon stock causes it to put out and bloom earlier than if on orange stock, thus leaving it much more liable to injury from late spring frosts. And it is better to have an assurance of an annual average crop than to have an extraordinary large one cut off by the cold, and the"frost line" is not readily located at the time of these spring frosts.

Now is this law were one over which we had no control, it would be simply interesting, as a fact, but if it can in any way be made use of, to our advantage or influenced by us, it immediately becomes of importance to us to know how we may so use or influence it, as to be benefited by it. One way to make use of it is to use thecitrus trifoliata as a stock on which towork citrus. Trifoliata is considered the most capable of resisting cold of any of the citrus family, owing to the fact that the sap, even early in the fall, ceases to flow so fully as to cause it to drop its leaves, and becomes a deciduous tree. It also remains dormant in the spring, until after other varieties of oranges are in full growth.

Other varieties of oranges worked on trifoliata partake of this character to a large extent, and will not start a new growth so early in the season, thus enabling them to stand with much better results. Such trees are also early bearers, nearly all varieties fruiting the second season from bud. While, of course, the fruit would be just as liable to injury from cold, the trees themselves will prove much more hardy. It is true that the orange worked on the trifoliata stocks, will produce but a dwarf tree, just how much so I do not think we yet know, but the fact may not at all prove a disadvantage. Such trees could be much easier protected in case of severe cold, the fruit can be gathered more cheaply, and from the fact of the trees being planted so much closer, the yield per acre could probably fall but little short of standard trees. This law could, I think, be used to our advantage through double owrking, budding the sour stock with trifoliata, as near the ground as possible, and budding the sweet varieties into the trifoliata tree worked in this manner, which areplanted in groves, do not start

growth or bloom so early in spring as standard trees. The trees I have are not so situated that I can give conclusive evidence as to especial hardiness as compared with those not worked, but I have never had one so worked that has been severely injured by cold. I have never had one frozen at the surface of the ground, even small trees, as is common with both sweet and sour stocks, they being planted so that the junction of the trifoliata with the sour stock is below the surface, thus getting the benefit of the hardier trifoliata.

They will, I imagine, prove as it were a half dwarf, although the largest three I have, a tangerine, is now fifteen feet high. Such trees are good growers, and a point in their favor is, that they are early bearers and very prolific, and will, I believe, be of value to us in making profitable, cheaply grown oranges. Again, can this law be influenced, if so, to what extent? What we need to know is, the effects of different treatment of our groves in starting the spring growth, or can it be retarded or accelerated by such treatment - as by late fall or early spring cultivation. Fertilizers, the effect of fall fertilizing: what is the result of using nitrogenous, like cotton-seed meal, are the conditions that require careful study, and we should not, too soon, jump at a conclusion through the effect of one experiment.

Let us remember that there may be some things we may not yet know about the business of growing oranges, and that it is still to live and learn.

A. H. CRANE.

Nashua, Fla.

President. - Mr. O. M. Crosby is another member of this committee, will he please step forward and favor us?

THE FUTURE OF OUR CITRUS FRUITS.
(EXHIBIT Q.)

I am grateful that the task of describing the past or present condition of the much vexed question of citrus fruit culture, or the results, have been given into more experienced hands, and that the

more cheerful and hopeful work of predicting the future is apportioned to your humble servant.

Now, citrus fruits, to most of us simply mean oranges, for in the words of our president at a recent banquet board -

> "We're proud of our products, and over them all we've seated the golden queen; She's peerless in blossoms of purest white, and dresses of living green."

And a matchless fruit she is. Here, then, is the basis of our hope for the future; for who can name a better one? "I," says the far-off voice of the California grower. Yet who, but a Californian, will admit his fruits superior to ours? Jamaica, Havana, Italy, have long since given up the contest for quality, and are content (?) with the even - if possible lower-returns which pauper labor, and a better, cheaper system of transportation yet allow them.

A LOOK BACKWARD.

Do you remember the dark days of 1884 and 1885, when, with only six hundred thousand boxes to market the returns barely paid expenses? When curbstone commission men were the rule, and consignments were frequently unheard of, after being shipped? Then, do you remember the advance in price of 1885-6, the depression of 1886-7, the boom of 1888, and now we have the collapse of the past events. The crop has been nearly doubling itself each year, until during the past season of 1891 and 1892, there has been forwarded at least three million boxes, which have, unfortunately, gone upon fruit stands already glutted with a crop of Northern fruit and, lamentable fact, Florida is deprived of her golden harvest of dollars, and, looking at the millions of newly planted trees, yet unproductive, growers are anxiously asking - "What of the future"?

A three-line advertisement in small type in one State paper, headed "Wanted, bearing orange groves," brings scores, even hundreds of replies. "A good time to buy them," says the level-headed business man, with a long searching look ahead, and so some of my friends are

acting accordingly; for the citrus industry is fast getting down to the every day, business-like basis of other fruits and products; and, notwithstanding the prevailing glut and low prices of the past winter, we hear many cheerful reports of those with first-class, bright fruit, well packed, who have cleared the usual high prices, and go on the even tenor of their way as tranquilly as before.

"Room at the top" is as certain in orange culture, as in practising medicine or law, and the thorough man who shows the same skill and brain necessary in other lines of business, will make his success in orange growing.

Northern fruit growers have a proverbially uncertain business. In Delaware, one paying crop of peaches in four is the rule. Even in Western New York, crops of apples, pears, or even strawberries and other small fruits have their "off years," and are poor dependence for the average farmer. Still, brainy men are yet succeeding in these lines where so many fail, by using every known device for improving the quality of their fruit, and making packages attractive.

Grapes are sold as low as $5.00 per ton in California, yet the acreage is fast increasing, and fortunes are made in one year, as in 1891, by California growers who have the pluck to stick to it through thick and thin.

## OVER-PRODUCTION.

The most sanguine of us must have long ago admitted, there is to be a great over-production of third and fourth-rate Florida oranges, and it behooves every grower to provide himself with every device or bit of information that will improve the quality of the fruit; for it is to be a question of "the survival of the fittest" that sooner or later confronts every business or profession.

From the last census report we note the value of oranges raised in the United States for 1889 was $6,602,099.06; lemons, $988,099; limes, $624,096.90. A very good showing for an infant industry, and deserving the protection enjoyed by older and stronger infants.

But the most hopeful future signs are that our market is not to be confined to this continent. Other shores are tasting our matchless fruit and hankering, like Oliver Twist, for "more." Note the advertisement of British merchants soliciting consignments, and the good returns from those who have tried a few shipments. To our mind these facts open a most promising future, and the coming season may see a line of ships put on to run from Florida direct to British shores. Turning from the orange to the lemon, an even more promising outlook greets us, for in place of a glut is greed for more - a great demand - which is not half filled. To be sure, being a more tender fruit, a smaller area is fit for its culture. Again, on our rich hammocks it often grows too coarse and rough to be marketable; yet in our poor black-jack ridges in the more southern lake-protected regions, it attains the perfection that has made the Florida orange famous. It will be many years before Florida will glut the home market with lemons, and a great future opens up for the careful grower.

## THE POMELO.

Passing through upper Broadway, New York, a few years since, after a happy winter in Florida, I noticed a huckster with a wagon load of the now popular, then unknown, grape fruit or pomelo. He wore a discouraged look as he came out of the houses with samples of fruit which he vainly offered for sale. His countenance lightened as I asked, "How much are those grape fruit? and he replied, "Well, I am glad there is one man in New York who knows what they are. I can't sell them"; and I happily carried home a sack full at the rate of "eight for a quarter."

To-day what a change, and how suddenly popular has become this almost unknown, healthful fruit! While oranges have gone begging at $1 per box the past three months in Jacksonville, grape fruit have readily brought $2 per box, though so large that only a fourth the number of oranges

could be packed in the same box; and all growers know they thrive with less trouble and are equally prolific as the orange.

Moral. - Plant more and better grape fruit.

The citron of commerce is coming to the front, and the demand is increasing, $8 per hundred being offered in my section by parties who preserve them for market.

The lime, being even more tender than the orange, thrives best on high pine, lake-protected regions of far South Florida, - where certain parties are planning to enter into its cultivation on an extensive scale, and bottle the juice for export. The figures quoted from the census, $624,096.90, as the return from lime culture for 1889, are amazing, if true, and show a much greater demand than seems possible to our limited vision. As to the shaddock, we confess we see but little "future" for such a coarse, unwieldly, pumpkin-like product.

On the whole, then, a level-headed view into the future, while not so rosy as the more visionary outlook a few years past, should not be disheartening, but hopeful to the conscientious growers of to-day. "Boom" prices for fruit and for groves are probably gone, never to return, and the future of citrus fruits must be the same as that of apples, pears and grapes of the Northern States, albeit, we still believe on the whole showing a balance in favor of the golden fruits.

O. M. CROSBY.

PRESIDENT.- This constitutes the whole of the report of the committee, and the matter is now open for discussion.

Mr. Healy. - The chairman of the committee made a statement in regard to the navel which I think is wrong. I have raised the navel for ten years. In the West, I got from $2.50 to $3.50 a box. I got as much fruit from the navel as any other tree. They are so much larger that they do not have to bear as many fruit to make up the same quantity of boxes as the smaller varieties of oranges do. I do not think it is fair to condemn the navel and say that it is not good, that it is worthless, that it will not bear. For they are a good orange, and bear as well as any others. In transportation they hold up as well as the others. The tree on which navles grow

may not have as many oranges as other varieties of the citrus, because of its large size, but the fruit is there, just the same. I think it is going rather too far to say that the navel is not a bearer by any means.

Mr. Winter.- I do not like to hear the navel condemned.

Mr. Bacon. - I had some navels. I obtained the buds from a man in town (Ormond) who got them from Major Anderson of St. Augustine; they were supposed to be of the St. Augustine seedless. I girdled some and slashed the bark of some. On one tree that I girdled there were more oranges than all the balance of the trees, that is, it held more. This year I had few navels. I failed to fertilize at the right time, and the result was that the fertilizer I put in in January was too late. They are, however, now in a very thrifty condition. The tree which I girdled nearly died afterwards.

Mr. Healy.- I would like to qualify my remarks about the navel; there is what is called the Parson's navel, which will not bear fruit. They did not with me, except one year I had them girdled, and as the gentleman from the scrub (Bacon) says, "[redacted] died." The navel which I had was brought by the representative of the United States from Bahia, and the department sent one to Col. Dancey; one to Major Anderson, and another Mr. Wells got. Mr. Wells said that he would not give any cutting of this tree to any one, but he had a friend who asked him for one, and he said he had promised not to let anyone have a bud; whereupon his friend took some. I went to the gentleman's house, and he would not give me any, so I took one, and that is the way I got the stock which I am now raising.

Mr. Woodworth.- I think that there is now but one of Mr. Wells' trees living. Very soon after he got his trees, a friend of mine told him that he had a variety of navels that would surely bear. Mr. Wells was very careful of his Washington navel. Buds from his tree bore satisfactorily. The navel is a good

orange. People in the North have bought and paid $4. a box for them, when you could get no more than $1.50 for any other kind. I think the Parson's navel was raised in Brazil, from where it came, simply for its looks, or something of that kind. Any one can tell them, from the size and shape. The fruit is nearly round, and of equal size at both ends.

In regard to the Mediterranian Sweet, it is a good orange; it is a beautiful orange, a nice orange. I call on Mr. Crane to give testimony about this orange.

Mr. Crane. - I can endorse all that was just said. After they arrive at maturty they bear better than any other.

Mr. Duncan. - I said nothing whatever about the quality. I have trees of both kinds. I know there are several groves whose owners are seriously discussing what they will do with them. In regard to the navel, I sent to California for some, but we have not yet got any fruit from them. I have never heard the naval recommended as a good bearing tree. The navel is not a good bearer in Florida. It may be in Mr. Healy's particular locality. I also hold that my statement is good in regard to the Mediterranean Sweet, that it does not bear well generally. I do not hope to ship much fruit from my trees.

Mr. W. S. Hart. - What is your navel budded on to Mr. Healy?

Mr. Healy. - The most of it is on sour stock, but some is on sweet stock, and I must say that I cannot see my difference. There is one thing more about the navel, it is a fruit which you can keep.

Mr. W. S. Hart. - The reason I asked is, there is such a marked difference on the orange stock and the Creole, or wild lemon. I have never known it to fail to bear on this lemon.

Mr. Wright. - We have about one hundred Mediterranean Sweets, which are about five years old. They began to bear when three years old, and are now loaded down with fruit.

Mr. Mead. - A gentleman near my place told me that out of his hundred trees, he only had about twelve to bear. He said that he never got more than seven boxes. He girdled his trees this year. He girdles spirally for about sixteen inches.

Mr. Taylor. - I desire to call attention to a specimen of a new California fruit, grown in Las Angeles county, and also to some lemons, the Genoa, etc. They are going into the business of raising lemons generally. The amount of lemons imported for eight months, ending Feb. 28th, 1891, was $2,072,164. The amount for a like period of time, ending Feb. 29th, 1892, was $2,454,513. There is certainly a growing demand for this fruit. The California people are very much interested in it.

Mr. Street. - I would like to inquire if any one has met with success on our coast with the navel. I got more fruit after slashing my trees. I have what is known as the "Bostrom" naval. I, myself, am seriously thinking of setting them out in another grove.

Mr. Bacon. - My experiments in girdling were satisfactory. It seemed the trees put forth a new growth after having been girdled, and they bore very prolifically.

Mr. Duncan. - The Jaffa is not so good as the St. Michael. The St. Michael has not many seeds in it.

Mr. Anderson. - From twenty trees we must have got over two boxes to the tree. We have probably one thousand five hundred trees of the Mediterranean Sweet, and of all the oranges on our grove, none are as good as this variety. The navel is a good fruit, and bears very prolifically, and we have never found any trouble at all with it. The Mediterranean Sweet is good after it is six or seven years old, before that the fruit drops.

Mr. Gaitskill. - In Marion county we have a few Mediterranean Sweets, and we think a great deal of the fruit.

Mr. Phelps. - Perhaps Mr. Adams could tell us something in regard to the navel.

Mr. Adams.- I received from the department at Washington some navels. I budded these varieties on to the lemon. They have borne as prolifically as any trees that I have. They carry good fruit. I do not think that I have any trees that bear more fruit than these. They always bring fancy prices. These navels were received by the department at Washington from Brazil, which is their home. My observation of the navel is, that under ordinary treatment it is not a very profitable tree.

Mr. Williams.- I have had experience with the navel orange, extending over a period of nearly eighteen years. I got the same kind of navels from the department at Washington, as Mr. Adams did. I got mine in 1876, and I say that if I did not have a sign of a navel tree to-day I would better off financially. I got some two hundred boxes. I think it is a fine orange tree, but I do not think there is money in it.

Mr. Phelps.- I have heard the name Washington Navel, Riverside Navel. There is not more use to call it the Riverside Navel than the Washington Navel. It was named Riverside by the people of a town in California of that name. It should be called Bahia, as that is the name which was originally applied to it.

Mr. Bacon.- I move that we adopt the name given by Mr. Saunders for the navel, - that is, "Bahia."

Mr. Bielby.- They are all Bahias. I think it would be simply complicating matters to call this particular navel "Bahia.". Nearly every man who has a navel tree has the Parsons navel. I would prefer that the Washington or Riverside navel be called the Sanders navel, so as to properly distinguish it. Call them all the Bahia orange.

Mr. Taylor.- The question of the name has been worked on for several years. I believe that it is now at last settled definitely that the Washington navel is a synonym for the word "Bahia." Mr. Sanders wanted to name it "Bahia," however, and I think that we might respect his wishes in the matter.

Mr. Adams.- There is not question but what the name "Bahia" is the proper and original one, but how to have it called by that name is what is the trouble. The people in some/found out that this navel was a distinct variety, and as it came from Washington, from the department, they called it the Washington; and I doubt very much if this association has any chance of making the people call it the Bahia, or anything else except the Washington navel. In our catalogues and books descriptive of fruit, there appears kaki, but the people call it the Bahia, or anything else except the Washington navel. In our catalogues and books descriptive of fruit, there appears kaki, but the majority of the people call it the Japan persimmon; and the same is true of the grape fruit, as it is commonly called,- you never hear it mentioned as the pummelo. It is my conviction that, whatever action this society may take, it it will be "love's labor lost." A long experience in trying to restore obsolete names convinces me it cannot be done.

Mr. Phelps.- Let us try.

Mr. Healy.- I am too old to go to school again. An old man came to my house a short time ago, and asked to see a pummelo. I took him out and showed him one. "Why," he says, "that is nothing but a blanked grape grape fruit." I cannot say "Bahia". These names you are not going to change.

Dr. Hawkes.- I think we should consider this matter fully, and therefore I move, Mr. President, that the matter be referred to the committee on nomenclature.

Mr. Bielby.- I object to this reference; it should be referred to somebody who knows something about it.

Mr. Mott.- I want it put "Bahia" on the records. We can say grapefruit, and Washington navel, but what I w would like would be to give it the original name, to have it put in the record.

President.- Dr. Hawks made a resolution that this matter be referred to the committee on nomenclature.
Said motion, being put to a vote, was defeated.

President.- The question now is on the motion that the name "Washington navel," on fruit sent out by

Mr. Sanders, be changed to the original one,- that is, "Bahia."

Adopted.

(Here many left the hall, under the impression that a motion to adjourn, that had been offered, had passed, which was not the case.- SEC.)

## EXHIBIT OF LABOR-SAVING IMPLEMENTS, AND A TALK UPON PUTTING UP ORANGES FOR MARKET.

Mr. W.S.Hart.- It may not be interesting to some, but it seems to me that the implements for handling the fruit crop, and methods of handling it, are two of the most important subjects for us to consider. I brought some things here apparently not worthy of consideration, but I think for a good many here who are investing in orange culture, all may prove so. I have here an apron, with pockets, what will be found very useful to the box maker or orange packer.

I have never seen but one make of step-ladder on the market that was so made as to stand hard usuage. Strength is lost sight of in working for lightness and looks. As good ladders can be made at home as can be bought, and at a saving of money. The one I have here is a home-made step-ladder standing 6 1-4 feet hight, sides 3 3-4 inches wide, 13-16 inches thick, 7 feet, 3 inches long, upper half of sides bevelled to 5-8, at edges, from 1-3 of width on each outer edge, treads 1 x 3 inches, set one foot apart and cut into it, sides 13 inches apart at top and 27 at bottom; under top tread, at the back, is a board 7 1-2 inches wide: brace legs, hinged to this, are 5 feet, 5 inches long by 2 3-4 feet x 1 inch, two pieces connecting them straight across and one diagonally. This ladder made of cypress, and painted; is light, stands firmly, and is durable.

I have never seen a perfect orange clipper yet. This Snider clipper is a well-made tool and has other good points, but the bevel is on the wrong side of the blade, which makes it impossible to cut the stem so short, but that it is liable to puncture and ruin any orange that comes in contact with it, and such orange may spoil a box when packed. This summer's

clipper does perfect work. It will shave the calyx close to the fruit and do no injury, is very handy to work with, but is made too light, and will not stand long or hard usuage. Here is a new made of clipper, sent in by Mr. C. H. Curtiss of Astor. He claims good work, and durability for it. I have not used it, so know nothing of its merits. There are others on the market, but none that I have used that could not be greatly improved upon. Cannot some inventive citizen of this State meet the requirements of a perfect orange clipper?

I have been working for some time to perfect some kind of a fruit receptacle that would thoroughly protect the fruit from thorns or other injury while being carried about in the tree and on ladders by the picker. The nearest I have come to what I want is this bag, with strap to go over the shoulder, made of two thicknesses of heavy canvas on the front, and with a flap at the bottom, so that when full the bearer can, by stooping a little, lower it to the bottom of the box, then unhitch the flap from this harness snap, and by dropping, and surely unharmed. I have these bags, also, made of sheep-skin, with the wool inside, an idea given me by a lady from the Azore Islands where orange culture is much older than in Florida. These protect the fruit perfectly from thorns, but allow of jamming between limbs, or the ladder and the body of the picker. This is an element of danger only with careless pickers, but to obviate it I have had this and other styles of tin receptacles made to fit clear around the body and hang on the shoulders with suspenders. This arrangement makes it easy to carry a heavy load of fruit easily. At the front you see a trap door for the discharge of the load. This receptacle will allow of even getting into a lemon tree, without danger of either thorning or jamming the fruit, but it is not a success on account of the fruits bridging between the outer and inner sides when unloading. Possibly this may be prevented by having the space narrow at the back, and widen as it approaches the door.

These field boxes, for carrying the fruit from grove to packing house, are of my own invention. The ends or heads are 1 x 10 x 12 inches, and have a hand

hole 2 inches down from the upper edge, the sides and bottoms are the ordinary sawed pine box side, 6 inches wide; these are better than veneer, being stiffer, which prevents pinching of fruit; the sides are nailed 1 inch up from the bottoms, leaving free circulation of air, the ends stand 3 inches above the sides and have 5 - 8 inch wooden dowels, standing up 1-2 inch, set in upper edge 2 inches from diagonal corners; directly under these, in the bottom, are holes, a little larger, bored to receive the dowels of another box, when tiered up. These boxes hold about two-thirds of a standard box of packed fruit, and can be piled, one above another, as high as a person can reach, without danger of curshing the fruit. The dowels hold them from reach, without danger of crushing the fruit. The dowels hold them from slipping, when tiered up in hauling, and as there is free ventilation and no heavy mass of fruit in any one box, they can be stacked up in the packing house, and left until the fruit is needed, with as little danger of injury as though they were in bins.

My packing house is so made that I can drive to the back of it and put the fruit into shallow bins, with slatted bottoms, holding six to seven standard boxes of fruit. They are 6 feet long by 5 feet wide, and are hung in the middle so that they can be tipped to slant forward or back, thereby greatly facilitating the putting in or taking our of fruit from either the front or back, as they can be tipped so that the fruit rolls to or from your hand, and it also allows of two decks of wide bins, thereby saving much space. I grade the fruit from bin to bin, making three grades. Fancy, No. 1 Bright, and No. 2 Bright; Russet, I have practically none of. In grading, I examine every orange carefully. If it is dirty, and rubbing will not clean it, it is washed, either with a brush or sawdust and water in a barrel hung on bearings. If scaly, the insects are scraped off with a light spatula, made of hard pine.

From the bins they are sized.

I have here the Ayer improved sizer. The one great advantage of this one over other rapid sizers is that it does not let a flat orange through any sooner than a round one. This is the trouble with most sizers,

they drop a flat orange in the bin with round ones, of a much smaller size. With this sizer, an orange will drop in the same bin, if run through repeatedly, nearly every time.

Question. - What is the price of the sizer?

Mr. Hart.- $55.00 for the single-chain machine. I do not know the price of the double sizer than can size two grades at once.

From the sizer, the fruit runs into bins having cloth bottoms, and it is taken from there by the packer, who can move his packing table, which has a top slanting towards him, to either bin.

Now as to boxes and box material. I have always found great difficulty in getting just what I wanted. If I send an order stating what I require, the sides come of poor quality of wood, or too thin, or they may be cut 27 inches long, but 7-8 inch heads come with them; or cut 26 5-8 inches long, and the heads sent be 1 inch think. Some of the Bangor sides are cut so wide that an edge has to be trimmed after the box is made up. The heads may be rough or cut 12 inches wide when green, and then dried and shurnk to 11 1-2 inches, or they have a good deal of sap, and it is mildewed to a dark blue color. The Bangor side has been the favorite in the market for years past, but now there are some very fine pine veneers being gotten out in this State, that are likely to supersede them. The Leslie side is particularly fine and handsome. The Moyer head is true, full sized, light and handsome, but is said not to stand well where roughly handled in transit. Can we not decide what we want, and, by demanding that, get it?

I here have a device of my own invention for holding boxes when being made up. It is light, can be taken under the arm and carried wherever wanted, can be used on a table, bench, or on the floor. It holds the heads true, while the sides and straps are being put on, and easily slips out when the box is completed. It is adapted to either a full box or the half box, used for the Oriental oranges. I use the saw palmetto leaf stems for straps. These are easily got of sufficient length, where growing in high scrub and, after being cured in the sun for ten days or two weeks, become exceedingly tough and pliable, will turn the corners

without breaking, and are a distinctive mark of Florida fruit. They are passed through a leather splitter, such as I have here, shaving off the rounded side and bringing them to a uniform thickness, and when placed upon a box, and the end fastened with a double-pointed tack, add greatly to its neat appearance. The fruit is carefully and closely packed, after being wrapped in this paper that has my address and private brand upon it; the oranges coming up 1-2 to 3-4 inch above the top of box, according to size of orange.

From the packing table the full boxes go to the floor, and are slid against stops under this press. This 11 x 11 inch display card, for the retailer to use to call attention to the fruit, is wrapped in paper and placed on top of one section, the straps pulled from under the double-pointed tacks, and raised to admit the cover. With a movement of the thumb this press is loosened and brought down across the box, the nailer sits down upon the lever and nails the cover. The press is of my own production, and its special feature is that its bearings are next the hoops, where the nailing is to be done, and allows the middle of each section to bulge, if the box is tightly packed, and as the fruit shrinks in trinsit the spring of the cover takes up the slack, and the box is still snug. It also brings the fruit all down at once, and thereby saves all dangerous lateral pressure. When there is no lever used, the knee of the operator presses the middle of the section below the outside to get the end down, and crushes the fruit, at the very first, below where it need ever go, thereby bursting it or badly crushing it, if the box is as full as it should be packed. Then, to nail the middle and other end, a lateral pressure is brought to bear upon it, which is liable to still further injure the fruit. Many of the presses used have this same fault of pressing the middles more than the edges.

If fruit is so mashed, it will cause the rest of the fruit in the box to decay also, if it is long on the way to market.

I always buy the best material I can get, and trim all rough edges from the box after the cover is put on. I use a pretty stencil with trade mark upon it, and in every way try to give my fruit a handsome appearance. I put 12 to 15 cents more per box into the work and material than most people, and the pith of the whole matter is this, with the fine quality of the fruit, causes it to bring $1 per box more in the market than the highest market quotations at the time of sale. I have none of these

home-made appliances for sale, but the ideas embodied in them are at the service of any member of the society who chooses to make use of them.

Mr. Phelps.- I think Mr. Hart is rather modest. I have seen his fruit bring a great deal more in market than any other.

In reply to a question, Mr. Hart said: "I purchased these wrappers for 14@16 1-4 and 18 1-2 cents per ream of 480 sheets including the printing."

There were quite a number of exhibits of tools and devices for putting up fruits for markets, including another press for putting on covers, a device for making boxes, the rope sizer, the Meyer orange box, a cart for hauling fruit, the Cut-away and the Alliance harrow for working groves, and the Garner wrapping and printing machine, the latter being put in operation by its inventor, outside the hall.

Mr. Haynes or Orland also exhibited a crate called the "Perfect Spring Fruit and Vegetable Crate," for which Haynes, Young & Bailey are agents.

Mr. Love.- I wish to call attention of the meeting to a matter which I think is of very great importance, that is, the size of the orange box for shipping. It is now 27 inches long, and the heads are 1 inch think. There was a resolution passed by the Fruit Exchange to change the size of boxes, the sides to be 26 and 5-8 inches long, and that the heads be 7-8 of an inch think. A gentleman who represents a box manufacturing company says that they can sell them $1.00 a thousand cheaper when they are this size. The Fruit Exchange has passed a resolution, as I have said, to change the size, and I move, Mr. President, that we, the Florida Horticultural Society, pass a resolution to the same effect.

President.- It is moved and seconded that it is the sense if this society that the sides of orange boxes be 26 and 5-8 inches long, and the heads 7-8 of an inch thick.

Motion prevailed.

Mr. Phelps.- I move that a committee on final resolutions be appointed.

Motion was carried, and Messrs. C.L. Taber, Edward Winter and S.C. Cunningham were named for said committee.

The Society then adjourned until 7:30 o'clock.

EVENING SESSION.- 7:30 P.M.

President.- We will now proceed to the regular order of business. The first thing on the programme is the election of officers.

Mr. Phelps.- I move that the secretary be appointed to cast the vote of this society for Dudley W. Adams, for president, for the ensuing year.

Which motion having prevailed, the secretary was instructed to cast the vote for Mr. Adams.

Mr. Adams, Pres.- I assure you, gentlemen, that I fully appreciate the compliment, and I appreciate it all the more because there are so many other men here who are competent to fill this position of honor and trust. The work devolving upon this office is not a trifle, but it is work in which I take pleasure.

The following officers were unanimously re-elected: 1st Vice-Pres., T.L., Mead, Oriedo, 2d Vice-Pres., Geo. L. Taber, Glen St. Mary, 3d Vice-Pres., Geo. M. Wright, Chuluota, Secretary, W. S. Hart, Hank's Park, Treasurer, J. B. Anderson, San Mateo, Cor. Secretary, E. O. Painter, DeLan. Executive Committee, Lyman Phelps, Sanford, C.W.A. Bielby, De Lan, A. H. Manville, Jacksonville.

Mr. Hart, Secretary.- Gentlemen and friends:- I thank you for the honor of being again re-elected, and assure you that I appreciate it, for it certainly is an honor to represent, as one of its officers, a society whose usefulness is not bounded by our State lines, while the ability and usefulness of the horticultural labors of some of its members have more than a national recognition. I than k you, though when leaving home I had fully made up my mind that I could not serve you this coming year, as my own interests must suffer if I do so, but after the many kind and appreciative words that have been spoken, I can but feel it to be a duty, as well as a matter of pride and pleasure, to continue an active officer, and, subordinating my personal interests to your wishes, say that I will accept, and serve you to the best of my ability.

Mr. Phelps.- I have a matter which I would like to bring before the society, in regard to the compensation of the secretary. He has served us long and faithfully, and has much more of the society work to perform than any other officer. I think the least we can do is to pay him for what he expends. I move that he be paid $25.00 for the past year, and $50.00 for this year.

Mr. Hart.- What I have done, I have done freely. I will accept the amount for next year, but none for past labors.

Mr. Healy.- I think the secretary should have $75.00 for the coming year, and I move that as a substitute for Mr. Phelps' motion.
The substitute was accepted by Mr. Phelps and adopted by the society.

Mr. Healy.- I do not know that I will be in order, but it strikes me that now, while all the members are here in the town, it is a good time to do something about the finances of this society. We need more money than we have got. We need the money, and we have got to have it.

Mr. Bielby.- To bring the matter before the society will not be out of order. I move that these proceedings shall be published in book form, and that they be paid for by the society.
Motion carried.

On motion, the president and secretary were directed to edit the proceedings and have them published.

Mr. Wright.- I would like to know how we are going to pay for it. Before we contract a debt, I think we ought to know how to pay it.

Dr. Hawks. - Let us see what the expense will be.

Mr. Phelps.- The expense would be from $1.10 to $1.30 a page in book form, for one thousand copies. I am willing to say, as one, that I would give my name and check for $12.50.

Mr. Painter.- The cost of the book would be greatly governed by whether it was in phamplet or bound form.

Mr. Mann.- The Illinois State Horticultural Society published their proceedings, and each member paid for as many as he wanted. I think that is the best way.

Mr. Holldridge.- I do not know but what Mr. Mann is right, but at a later day it was published by State appropriation, and one copy furnished to each member. If we were to raise the money here to-night, each one t take so many copies, it would be virtually taken out of the hands of the people outside. I believe there are a great many horticulturists in Florida, who would be glad to buy it.

Mr. Wright.- I did not intend that members here should get all the copies. Each member has already paid a dollar in order to get a copy of the proceedings when they are published. I want one for every man and women who buys it, and I want them to pay as much for it as you or I. If there are any persons here who are willing to help this society, I say "God bless them;" let's take the money. I believe that the report is worth $1.00.

Mr. Hart. I have the names of these gentlemen who have chipped in $12.50; is that all?

Mr. Keck.- I am willing to give in a part of whatever deficiency there be, provided that others will do so.

Mr. Phelps.- We will do the same, and it is understood that the expense of publishing the report, over the available funds of the society, shall be paid by the undersigned, not to exceed $1[illegible].50 each.

It was so agreed.

Names of those subscribing to the above: Lyman Phelps, C. P. Healy, Dudley W. Adams, C.P.A.Bielby, H. Bean, W.S. Hart, George L. Taber, W.J. Hewett, S.A. Cunningham, E.O. Painter, Haynes, Young & B ailey, H.S. Williams, A.S. Hubbard, W.H.H.Holdridge, R.D. Hoyt, W. H. Sharp, E. Winter, John Fabyan, E.M. Starr, S.H. Gaitskill, John Stillman, W.H.Mann, George H.Wright, W. A. Cooper, W.T. Swingle, James Flye, J.B.Young, J.I. Wilson, T.L. Mead, J. Irving Keck, A.L. Duncan, Charles Pugsley, George M. McDonald, William A. Brown, P.J. Lyons, O.P. Hooks, H.S. Mann and J.M. Hawks.

Mr. Mann.- Would it not be a proper time to settle the question where the next meeting shall be held?

Mr. Cooper.- We extent to you an invitation to meet in Orlando; hotel rates $1.50 per day, and plenty of houses for holding you. I move that Orlando be chosen as the place for the next annual meeting.
Motion seconded.

Mr. Mann. I am requested by the citizens of Palatka to invite you to hold your next meeting in that place.

Mr. Bacon.- We want to divide this up a little, but I was requested by the proprietors of the Ormond Hotel and the people of Ormond to invite you to come again. We have not treated you well enough. The proprietors of the Ormond requested me to come to ask you next year on the first Tuesday in April, before the hotel closed.

Mr. W. S. Hart.- Mr. Chairman, I was in hopes this year that we would get an invitation from the West coast, as it has been thought by some that our association has been a rather one-sided affair. I was in hopes that we could show them that it was a State association, and not a local one. We met at Orlando, and there were good hotels and good railroad facilities, but it would please me if we could go to some portion of the State to which we have not yet been.

Mr. Hoyt.- There is no member present from the City of Tampa, but I think I can invite you to that city. There you have every accommodation that you can get in any city of Florida.

Mr. Duncan.- I join Mr. Hoyt in extending an invitation from the City of Tampa to the society.

President.- Itis moved and seconded that this society hold its next meeting in Orlando.

Mr. Harvey. - I extent a hearty invitation on the part of Pensacola. We will entertain you well, as we are used to entertaining and are in the habit of it, we have no trouble in doing so. The people in West Florida say, "Oh, that organization belongs to South Florida."

Mr. Healy.- If you are going anywhere, go to Pensacola. Those people there entertain you from the time you arrive until you leave. I was in Pensacola with the World's Fair Commissioners, and we were entertained finely. I met a friend on the street, and he says, "How are you? You must come up and take dinner with me." I told him that I was going to have dinner at one o'clock. He said, "All right, I will have dinner at three; don't fail to come." I met another friend, and he postponed his dinner to six, when he found that I was to dine at one and three, and in a short while another invited me to dinner, and when he found out about the previous hours, he had dinner at nine o'clock. I attended all of them. Then they took me down to the Florida Club. They got done with me at the Florida about three in the morning, that is, "the boys say so." I got home sometime that night, or the next day, or sometime, that is, "the boys told me so." I know they entertain. After all that they took me the Oseola House and the Lagoon Club House. Go to Pensacola.

Mr. Lawrence.- One of the main objects of my coming to this meeting was to get this society to go to Pensacola. We want to get you in the western part of Florida or Middle Florida.

Mr. Wright. - We had a good time at Orlando before, and the hotel rates were very reasonably. We have arranged with owneres of the hotels to accommodate members for $1.50. We now cordially extend an invitation to this society to go to Orlando this year. I think that before we go to Pensacola, we ought to know what it is going to cost us there. We have been improving a great deal since your last visit to our town. We want to show it to you, and also the vineyards.

Mr. Healy.- We do not want the hotels in Orlando to make special rates of $1.50 per day, when we can get regular rates at the same price in Pensacola. We will increase our membership greatly by going to another section in Florida. We will increase our membership greatly by going to another section of Florida. As to seeing vineyards, we will stop at Tallahassee on the way, where the finest vineyards in the world are situated. I will say right here, that I know Col. Chipley, and I know that when we strike the L.& N.R.R., we will get low rates. And I know that he will arrange for a stop over in Tallahassee, and see the vineyards of that place.

Mr. Holdridge.- The northweast corner of my orange grove is situated six chains and three links from the centre of Florida, so that I am a citizen of all Florida. Let's go to Pensacola.

Mr. Harvey.- I am glad to see that we have so many friends here. We will try to make you have a good time. Among us is Col. Chipley, who is always a faithful worker in every public cause. I will assure you that you will get low rates to Pensacola, if you will come. We can stop at DeFuniak Springs and at Tallahassee, and you could secure a great many new members. I am confident, in my own mind, that the fruit men of Western Florida would be glad to become members of this society.

Mr. Phelps.- I want to go to a new place. I want to go to the country where there are such good men.

President.- The motion of Mr. Cooper to make Orlando the place of meeting is before you.

Mr. Cooper.- I withdraw that, in favor of Pensacola.

President. - Orlando being withdrawn, the question is on selecting Pensacola.
Pensacola selected unanimously.

Mr. Bielby.- There is another question which I would like to bring to the attention of the society. If we should finally adopt the first Tuesday in May for the meeting of the society, we could never change it. I do not believe that it would be well for us to have our meeting in Pensacola at the time the World's Fair was being held in Chicago. I believe that we should have it a month earlier. I move, sir, that on next year, the society shall meet on the second Tuesday in April.
Motion adopted.

President.- I want to make a suggestion in reference to one or two of our present rules, which might be better if changed. My recollection is that we did not fix upon three members on each committee because that was a good number, but simply because that was all the members

we had at that time. Now, we have a great many more members who can be set to work. It has occurredto me that there are other subjects which should be placed in the hands of a committee, and that the committees should have more members.

Mr. Bielby.- If we made that change, would it not somewhat detract from the meeting, by making it more formal. The general discussion, which is much more valuable than the reports, would be shortened. I am sure that it would be much better if the three members of a committee were allowed to make only one written report through their chairman. The committees this year were changed, almost entirely from those of last. What additional committees would the president of the society suggest?

President.- One on irrigation.

Mr. Bacon.- Mr. Bielby's suggestion is not good, because there are more parts of the State than one, and it is impossible for a committee to meet and consider the different effects in various portions of the State. As it is now, each member can write their article, and let it go in for what it is worth.

Mr. Bielby.- I think, myself, that the written reports of the committees should be made by their chairman. I believe that if any member of this society should be appointed chairman of a committee, he should either decline the honor at once, or write something worth reading. Men come here who do not write their articles until they arrive, when they dash off a few lines on the back of an envelope, and call it a report. Now, we want to put our proceedings in form, but we don't want to put in such articles as that. I move sir, that the president be requested to appoint a new committee on the subject of irrigation.
Motion adopted.

Mr. Bielby.- I move, sir, that hereafter all committees shall make one written report, through their chairman.

Mr. Wright.- I can see where this would cause a great deal of harm. I have had the pleasure of belonging to several horticultural societies. In Iowa, we were divided up into districts. We thus get reports from all over the entire State, and everything of

interest to horticulturists is then printed. I am a member of the committee on grapes, with Mr. Von Luttichau is growing them in another section of the State. I could not, it would be impossible, for me to say anything intelligently as to what can be done with any grapes except my own. I do not see how it would be possible for three men in different parts of the State to get together and accomplish anything in the way of making the report upon any subject. It could only be done at a great deal of expense and time.

Dr. Hawks.- The committee meets, and the chairman simply acts for them, and if any member of the committee does not agree with the majority report, they may make a minority report. The question is one which should be carried by the society and adopted. Let's have one report from the chairman.

Mr. Bielby.- I move that the committees report through their chairman. I do not see, for instance, why it was necessary for the three gentlemen on the citrus committee to make separate reports. If they had conferred together and worked out of the minds of each other theirideas, it would have made a much more comprehensive report, and one which would have been a great deal better.

Mr. Duncan.- The committee on citrus did as we thought best. Each member took one feature for himself. To have consolidated these reports, I should have been compelled to meet the other two members of this committee, and to have spent a good deal of time.

Mr. Wright.- As I said before, I can readily see how a great deal of confusion would result from such a course. One man would report one thing, while another would say something else.

Major Rooks.- I am one of the members of the committee on transportation. I wrote to the other members to meet me in Jacksonville, at the Fruit Growers convention, to make a report. I got an answer from one that he could make no report, and from the other I have never received any answer. I was unprepared, when I left home, to make a report, but was fortunately (?) delayed twenty-three hours in Palatka, where I wrote the article which I will read tomorrow. Now

it seems to me that if the chairman is requested to make the report, the other members of the committee will "shirk" their work.

Mr. Bielby.- I admit many of the objections raised are true, but there is no help for it. If the chairman does not do his duty, as is the case sometimes, I do not know why he cannot delegate his power to the second of the committee.

Mr. Phelps.- It is a very simple thing to send report from one to the other. It will take time and postage, of course, but then it is what we need.

Motion adopted.

REPORT OF COMMITTEE ON NATIVE FRUITS.

Mr. Bacon.- Before I proceed, I would like to say that Miss Varnum, who is in Portland, Maine, when I wrote to her, said she would mail a report, but I have as yet seen nothing of it. The other member of the committee has not as yet sent any report.

(EXHIBIT 3.)

NATIVE FRUITS OF FLORIDA.

Mr. President, and Members of State Horticultural Society:-

I must acknowledge that I am very unfamiliar with the native, or wild fruits of our State, having paid my whole attention to the standard cultivated fruits, and I am pleased to say that for the past six years we have been able to pick ripe fruit from our trees and vines every day in the year. For instance, on last Christmas we had six varieties of ripe fruit on our table, picked that morning.

However, there are quite a number of valuable native fruits in our State, perhaps as many, or more, as in any other State, and with the aid of one of the native "fruits" of our State, our "Cracker Boy," we have been able to make a list of fifteen varieties. We shall, for the sake of brevity, use common names. We expect opposition to some of our statements, and we wish it; for where there is no opposition there is no chance for argument, and that is what we are here for.

First - I will mention the wild orange. But is it indigenous to our State?

We supposed that the question was settled that it is not, having been brought here by the Spaniards, but now a gentleman rises up and claims to prove, that when Ponce de Leon first landed on our shores, he found the orange growing wild in our hammocks.

Strange things are being proven now-a-days. It is even claimed that the Garden of Eden was located in Yucatan, and that civilization moved eastward, and that the ruins of Egypt are of late date. Is it not possible that Florida was once a portion of the great continent Atlantis, extending across the ocean to within sight of the Gates of Hercules (Gibralter) and that the orange was carried from Florida to the Mediterranean? We hope so, and yet, why should we care?

The wild orange trees found in our hammocks, have been very valuable to our State. At the beginning of the orange industry the wild trees were sawed off two or threefeet above the ground, the stump transplanted to newly cleared land, sprouts started, and was budded to sweet fruit.

It is said that some contractors for planting new groves, when they were short of a few trees, would saw off a portion of the longest stumps, drive them into the ground in place of trees, and thus fill in the spaces. The wild groves were very prolific in stock; for instance, Messrs. Reed, Knox & Reed, eight miles above here, purchased land, including fifteen acres of wild orange trees. They cut off the trees and budded them, then transplanted a portion of them to new ground, until they had a grove of over _____ including the wild grove; and I have no doubt the grove had furnished stumps for fifty acres, previous to their purchase.

The wild oranges makes an excellent wine, and I have no doubt that within a few years the fruit will be cultivated for that and other purposes. We think the juice for an ade superior to the lemon. The juice, with a portion of the rind, makes the famous Dundee of Scotch marmalade. Large quantities of the wild oranges are yearly imported into Scotland, made into Dundee marmalade, and exported to the United States.

Ladies of Florida, why do you let them do it? The fruit is also valuable to nurserymen for the large number of seed it contains (from twenty to sixty), producing the hardiest of stock upon which to bud any of the citrus fruits.

Second - The wild persimmon: An excellent fruit when ripened by the frost, and I am pleased--no, sorry, to say it has ripened in may parts of Florida within the past few years. The wild persimmon as a stock upon which to graft the kaki or improved varieties of persimmon is invaluable.

Third, Fourth and Fifth. - There are quite a number of wild plums, good for certain uses, such as wild goose, may haw, hog plum, etc.

Sixth and Seventh - The huckleberry and blueberry fruit in abundance at certain places, and with rich milk, brown-bread and cheese, what is better?

Eighth - The most wonderful sight of berries I have ever seen was a half acre of Dewberries near the bank of a creek, clay land, two feet above water. The land had been cleared of palmetto trees the year before, the logs piled, and the ground turned over. The next year, log piles and ground were covered with a mass of vines, and the vines black with fruit; bushels were carried away, and bushels rotted on the vines. No doubt the dewberry could be cultivated with profit; we have no room for it.

Ninth - The wild gooseberry grows on bushes six feet high, fruit blue, size of small cranberry.

Tenth - The wild cherry, bark of tree good for bitters; fruit makes a "lively" whiskey; never tried it (the whiskey).

Eleventh - Prickly pear: Ah! handle me gently with kid gloves on, and I will make you delicious jam and jelly; the color is worth the price.

Twelfth - The gopher apple. Well, I should not go far after it.

Thirteenth - Elderberry makes fine wine and delicious pies, if you like them, and have nothing better to use.

Fourteenth - The wild grape is good if you can persuade the birds, the coon and 'possum to allow them to ripen, and divide with you; but why tear your clothes in the scrub, trying to get something not one-half as goodas you have in abundance on your own trellis.

Fifteenth - The fruit of the Spanish bayonet is beautiful to look upon, and no doubt good to eat, if you like it.

Sixteenth - Last, but not least, is the saw or scrub, palmetto berry (Serenoa Serrulata). Fruit about the size of an olive fruit, stem and branches from six inches to one foot long, from twenty to sixty berries on a stem; when ripe, deep glossy black; when very ripe, a rich syrup oozes out through the skin, and the honey bees testify to the goodness thereof. The birds, bear, coon and 'possum fatten on the fruit, and the season for gathering is short. It is said that syrup made from the fruit, has wonderful curative properties for all pulmonary diseases. Did you ever eat one? Try one. Oh! send for the doctor; never mind, he has caught his breath. Some people say they are passionately fond of this fruit; we do not admire their taste. We are

tempted to bottle some of the green ones, label them "Florida olives," send them to Boston, and get square withthe fellows thatmade the wooden nutmegs.

If I were allowed to include in mylist the natural food products of our State, what State in the union could compare with us? For was not the whole power of the United States used in waging war against the Seminoles in our State? and it is said that during that time they subsisted entirely on the natural products of the land.

Ormond, Fla. C. A. BACON.

Mr. Phelps.- I would like toask him what he has done with the wild pawpaw?

Mr. Bacon.- I know nothing of it in Florida.

REPORT OF COMMITTEE ON ENTOMOLOGY.

President.- The members of this committee are C. F. Hopkins, chairman, Dr. Whipp and Mr. Woodworth of Welaka.

Exhibit T.

Mr. Woodworth:-

How to demolish the roaches, how to escape their filthiness, their hateful stench, and the rustle and clatter of their feet and wings, is a constant study to every Florida housekeeper. They have come upon us with the visions of night, they disturb all our meditations of clean butter, savory puddings, and clean, pearly-white bread. With their constant presence, nothing can be kept pure. And how reconciled many become to their company! I stopped for a time on my arrival in this State, with a fa-mily that seemed fully content to share their domicile with these cursoria. They said they could not be got rid of, so they had concluded to make the best of it. To the man they were very interesting creatures. He said they had meetings or conventions, he had not quite determined which. They would gather in great numbers around an old patriarch on the wall, by night, in the lamp light, making a circle with their heads inward, and listen attentively, as though engaged in worship, or in demonstrating some profound political problem.

But I wander, and must return to my subject.

The mantidae or mantis are worthy of some thought for the superstition they have excited. They seem to be all carniverous insects. Some call them "horse grasshoppers," and some call one family the "devils horse." One species is so slender in form and so near the color of the leaves and twigs, that they have been called "winged leaves."

The first pair of legs are strong and large, and are used to catch and hold their prey. They are attached to the anterior part of a long neck, which is held in angular position to the body, that suggests the likeness of a horse.

The mantis religiosa has a manner of putting itself in a position and bringing his front legs together, that suggests the idea of hands and arms placed in devotion; hence the name it has received, "the praying mantis."

This State may boast of a species of this family, superior in size to any found elsewhere. It is from four to six inches long, and is found on the coarse grass, in swampy places. The female is from six to ten times as large as the male. I should judge, in this family, there is no dispute for equal rights. Indeed, in all the lower orders, nature seems to have settled all such questions. This insect seems to have been made with no visible weapon of defense. But approach it on the leeward side, and rustle a little, and you will wish you weren't there. The intolerable stench it emits equals assafoetida, carbolic acid and bisulphide of carbon combined. These, the darkies call the"devil horse." If the last part of this name is questionable, the first part willalways seem appropriate to a devotional soul.

One of the most remarkable of the saltatoria isthe gryllatelpha vulgaris, or mole cricket. It is found in our gardens at all times of the year, and does no end of damage sometimes. The polecat has a great hankering for these insects, and will dig a deep,

slender hole to secure it. Some recommend that the cat be preserved, for the good it does; but with all respect to such sympathy for the odorous animal I beg to be excused.

*** I said the silk-worm and the honey bee were of more value to man than all the other insects put together. I must take that all back. On that question I am an agnostic. Without the whole insect world, how would our blossoms of plants, fruits and grains be fertilized? And who say say that the last is not needful to keep up the balance of the whole?

N. Woodworth.

On motion, meeting adjourned until 9 A.M., to-morrow.

THIRD DAY, THURSDAY, MAY 5,1892.

Morning Session.- 9 A.M.

Meeting called to order by President Adams.

Mr. Phelps.- In the matter of the incorporation of the society, I am instructed to say, by the executive committee, that there will be a meeting held at Sanford on the 20th of May for the purpose of perfecting this organization. Senator Delano requests me to say that there will be a meeting of orange growers on the 19th of the month at Orlando; you can attend the orange growers meeting and also the incorporation meeting of the society, one being one day and the other the succeeding day.

Mr. W. S. Hart.- There is a matter which, in my estimation, this society should look into. It is the careless handling of our fruits in transit. It is a subject which I think our society should take some action upon. Our fruit is handled exceedingly roughly on many transportation lines, but it is done only by the subordinates; I think that the officers of the roads would be as glad to have it handled properly and carefully as we would. The fruit is just thrown into the cars, and, when carried out, is dropped, thereby bursting the boxes and injuring the fruit, when it could be easily laid down, and thus avoid any injury. It is no use for one man to make a complaint, but if this society would say to the railroads that "we will be our own detective officers, and if we see any employee of your road handling fruit in a rough manner,

we are going to report it, and will expect you to warn that party, and, after his having been so warned, if he shall again be guilty of the same action, and is reported the second time, he shall be discharged," Ithink the officials would attend to the matter. I have had no time to put this in the shape of a motion.

Mr. Phelps.- Will no Mr. Hart put it before the house in the form of a simple motion?

Mr. W. S. Hart.- I move you, sir, Mr. Chairman, that the officials of the transportation lines of this State, when receiving complaints of their employees handling our fruit roughly, be requested to duly consider the same, and to give the parties so offending notice that they must not do so in the future, and repitition of the offence will surely bring dismissal.

President.- Gentlemen, you have heard the motion of Mr. Hart, which has been seconded, are you ready for the question?

Mr. Kock.- This is a subject to which I have given some little thought, but it seems to me that it requires some deliberation. If you have the person discharged who is handling the fruit, and he is generally a common train hand, he can easily get work on some other road, but if you have the conductor held liable then you have some one who has a position at stake which he cannot obtain so easily on another road as the train hand can his. I would prefer that it be referred to a committee. I presume that we have all experienced this rough handling our our fruit and are all interested in a subject which will do great things if accomplished. I move you, sir, that this matter be referred to the executive committee, with instructions that they confer with the transportation companies with a view of urging this thing.
Motion seconded.

Mr. Phelps.- The committee has a great deal of work; don't overload it.

Mr. Mann.- The railroad companies are ready to pay attention to your reports and complaints, if you make them in the right way.

Mr. Wright.- I believe that when these transportation companies understand that they have got to handle our fruit properly, they will handle it so.

President.- The question is on Mr. Keck's motion to have the matter referred to the executive committee. Adopted.

Mr. Phelps.- I move, sir, that Mr. Keck be appointed chairman of the executive committee for this particular purpose, and that the committee report on May 20th.

Motion carried.

Mr. President.- I think there is a matter which should come before the society. It is practically impossible for some members to get to Pensacola until Tuesday evening, unless they start on Saturday, as there is no train Sunday on some of the roads.

Mr. Delano.- As long as we have not passed to the regular order of things, I would like to say that a meeting of the Orange Growers' Union will be held at Orlando on the 19th instant, and we would like to have every orange grower in the State, either present or to be represented. I move that the committee on marketing, from this society, be requested to attend that convention, and participate in it, so far as this society is interested, and to endorse it.

Mr. Healy.- It strikes me that if we are going to endorse one thing, we will have to endorse everything. I do not think that we should endorse the Florida Fruit Exchange, the Orange Growers' Union, or any organization, or any other society of horticulturists. This society is not for the purpose of favoring any association or organization, it is not existing for that. The invitation is very kindly extended, and I think as individuals we should accept it, but as to this society sending a committee there to endorse the actions of this Orange Growers' Union, I think it would be a mistake.

Mr. Delano.- I do not wish to discuss this matter with the society.

President.- It is moved by Mr. Delano, and Seconded, that the committee on marketing, of this society, be requested by us to attend the Orlando meeting of the Orange Growers' Union, and endorse their actions as far as this society is interested.

Motion lost.

President.- The next committee on the programme is that of tropical fruits, Mr. R. D. Hoyt, chairman.

Mr. Hoyt.-

TROPICAL FRUITS.
(EXHIBIT U.)

Mr. President, and Members of the State Horticultural Society:-

We need much more light on this subject, and I do not feel that I am sufficiently posted to write intelligent upon it. Unfortunately, I live just a little too far north to carry out the experimental work which I started in this line, and while I have got together a fairly extensive collection of tropical fruit plants, I will have to leave the listing of the relative merits of most of them to those more favorably situated.

Tropical fruits may be divided into two sections; the first, those that will stand light frosts without injury, and second, those that will not endure it at all. I will, therefore, confine myself to the first section, as the second will have but little interest, except for those who contemplate growing fruits in some of the most southern counties or the islands of the reef keys.

The present season finds many of the fruit growers much more hopeful as to the future of that luscious fruit, the mango.

The trees throughout Hillsborough, parts of Orange and Polk counties, and even in some parts of Lake, are loaded with bloom, fruit well set, and the prospect is good for a heavy crop. This is, perhaps, the most important of all the tropical fruits, as it always meets with ready sale, either at home or abroad and at prices which only Billy Neold can expatiate upon, as I do not care to risk my reputation for veracity

The fruit is a good shipper, and, carefully packed, will carry to the most distant markets. There are many varieties of this fruit, and this season will give us an opportunity of testing them.

The avocado, or alligator pear(?) is also growing and fruiting nearly as high up as the mango, and all the trees, that are old enough, give promise ofa heavy crop. It is useless to try and describe this fruit to those unacquainted with it; suffice it to say that it is not a pear, but more resembles a huge, fruity nutg, which is served as a salad at table. Our northern friends have learned to appreciate the fruit, which brings fancy prices inall the large markets where it has been introduced.

The culture of the pineapple is now becoming one of the most important industires in all the southern counties, and as high up as Hillsborough, Orange and Polk counties. Large areas are being planted under light, lath frames, which offer protection from occasional frosts, and from the light sunshine, as the fruit grows larger, and is of finer quality, when grown in partial shade.

As a market fruit, its reputation has long been established, and the great northern cities now draw their supplies principally from the vast plantations on the reef Keys, while the lower Indian river country is preparing to market them by the hundreds of thousands.

Like most other fruits, there are many varieties, among the best being the Abakchi, Smooth Cayenne, Sugarloaf, Porto Rico, Ripley and Egyptian Queen. The Red Spanish is, however, the most largely grown, because the supply of plants of the other sorts was limited, but as they become more plentiful, and can be obtained at less cost, the Red Spanish will be largely supplanted by a better variety.

The great family of anonas are represented by several species and varieties, and some of the more hardy, as A. Squamosa and A. Chacmolia, are growing and fruiting in Lake and Polk counties. The fruit

is of little commercial value, being too tender to bear shipment to any distance, but meets a ready sale in our home market. The cocoanut palm has been planted to a very great extent along nearly the entire coast line of Brevard and Dade counties, and the waving palms may be seen for miles in almost unbroken lines, both on mainland and island.

The banana is also grown to an extent which few people realize who have never seen the large plantations of South Florida, and the revenue derived from them would appear no mean sum if compared with other products of the State. This fruit is mostly purchased from the growers by small coasting schooners, and finds its market in Key West, Tampa, and St. Petersburg, from whichplaces it is sent to interior points.

I should like to touch on many other fruits, expecially the guava, and its probable future importance as a commercial fruit, but will leave these until, with the assistance of other growers, I can prepare a paper giving more accurate details and one which may be worthy its publication in the records of the society.

Bay View, Florida. R.D.HOYT.

President.- You have the report of your committee, and it is now open for discussion. Mr. Haynes, can you not tell us something about pineapples?

My. Haynes.- About three years ago we planted 600 plants. We had that year a sufficient number of our own use. We have since that time greatly increased our crop. We now have planted 12,500 smooth cayennes; we have got cover now for three acres, and will soon have six acres under cultivation. Before long we will have 80,000 smooth cayennes. We find a ready sale for our pines. In regard to weight, some of our pines weight from six to eight pounds. Our pineapple plants we obtained from the Azore Island. We have a contract by which we are to receive all the plants from that island for the term of five years. We will receive about 60,000 plants this year. We have great confidence in the business, and have put in a large irrigating plant. It is difficult to raise them without plenty of water.

Mr. Healy.- How is your compost prepared?

Mr. Haynes.- Stable scrapings, etc., are rotten with potash, then to obtain the ammonia, nitrate of soda is added.

Mr. Hamlin.- Do you think that you can successfully compete with a location further down the coast?

Mr. Haynes.- It is our purpose to compete with them. It is our purpose to grow fruit which will at all times of the year demand a high price. We propose to grow apples which will weight from six to seven pounds on an average. We shipped pines to England and got $1.25 apiece net. We are willing to risk our money in the business.

Mr. Williams.- Mr. Chaffey has a number of pines planted on the Indian river, about 60,000 plants. The growth of his plants has more than doubled every year since he has planted any pineapples, and this year it will probably treble. He uses cotton-seed meal, and potash afterwards for fertilizer. We should like to hear from Mr. Magruder.

Mr. Magruder.- My experience in pineapples up to 1886, was very encouraging; I have not planted any since that time. I am now producing a new kind of orange, which I think will prove more profitable than the pineapple. I can speak simply from my former experience in relation to the pines, and all of my experience, nearly, has been on the Southern part of the Indian river. Capt. Richards, who is known as the "Pineapple King," and several other parties at different places on the river, are realizing most profitable prices from their fruit. A short time ago, in walking through his pines with a firend, Mr. Sanders, he pointed out a half-acre of pines, and asked Mr. Sanders what he thought of them. Mr. Sanders told him that it looked very well, but was not quite so think as some other portions, when Capt. Richards says, "I have justtaken over $3,500 worth of slips off of that half acre. Mr. Chaffey said that Capt. Richards was selling slips for twenty cents apiece, and as they plant 10,000 pines to the acre, you can make your own calculations at that, or at ten cents apiece. Mr. Chaffey said that he wanted a man who had $8,000 to put in a pineapple investment he knew of, which, he said, would pay him back that amount in two years, and still have the pines.

Mr. Crosby.- We are raising pineapples very successfully in open ground, with-out any protection. We have set about 20,000 pines this year, a few weighing eight to thirteen pounds apiece, and brought 75 cents to $1 each. We planted the yellow Spanish.

Mr. Magruder.- There was a gentleman in Orange county, who came to me a few years ago and said he wanted a few slips. I sent him some. He prepared his land with fertilizer, put it in well, he then dropped in a ball of potash, and later washed those pineapples with a solution of potash water.

Mr. Williams.- The pineapple industry will, after a while -in a few years- be like the orange industry. The market will be "glutted." and the growers will be able to obtain but very low prices for the fruit.

Mr. Rooks.- My experience has not been upon a large scale. I am located in Lake county. I have been raising pineapples for eleven years; my first were put out twelve years ago. I planted a space of then by fifty feet, and I sold the next year $55 worth of slips from that space. The frost of 1886 froze some of my plants. I put out all the slips that I could get hold of, which were not injured. I now have 2,400 plants, and I have twenty-five varieties. I now have the collection of twenty-five varieties which took the $300 prize and gold medal at the Ocala exposition in 1890. I have raised pineapples twelve pounds in weight after, and I raised one which weighed fourteen pounds. I have been able to realize from the sale of my pines from 15 cents to $1 apiece. If there were many in the business where we are located it would not be profitable. I covered my pineapples with a frame made of rails. My pineapples are between my orange trees. I am satisfied with my experiments, but I do not believe that the pineapple industry would be profitable if conducted on a large scale.

Mr. Hamlin.- Do you notice any difference in the hardiness of the different varieties.

Major Rooks.- I have not given them a chance to see which is the most hardy. They have all been treated alike. All the covering which they had, was a covering to keep off the frost, and I thought that was sufficient. I do not have any holes for drafts.

Mr. Bacon.- Speaking of frosts- I will tell my experience. I had a cocoanut tree and put it very near the ocean, and put a barrel over it to keep the frost from it. But when I went to look at it, it was dead; it must have been killed because of its being shut up so tight.

President.- The next committee is that of the one on insects and diseases.

Mr. Hubbard.-

DISEASES AND INSECTS.
(EXHIBIT V.)

Mr. President, and Members of State Horticultural Society:-

"An ounce of prevention is worth a pound of cure," and in considering the subject of diseases and insects of the citrus I have thought it desirable to present some facts regarding the little studied subject of plant digestion.

"To this end I have spent considerable time preparing a chemical formula table of substances, directly or indirectly involved in the process, and to give a sort of bird's eye view, have placed it on the board for inspection. You will observe that there is a regular chain of carbohydrates from quite simple to very complex forms, the vegetable acids, starches, sugars and fats yielding be ferments or chemical action the achohols and gases.

The sap of shrubby plants or trees varies greatly at different seasons. A healthy tree, when it takes its winter rest has stored considerable starch, and sometimes oil, in its live tissues, with which to elaborate flowers and foliage.

When the spring growth starts, the vital, albuminous, protoplasmic principle seizes this starch, and by adding the elements of water $H_2O$ splits the starch up into fruit and grape sugar. These sugars again are united by the subtraction of $H_2O$ into cane sugar, and it is as cane sugar that the carbonhydrates are conveyed from one part of a tree to another, to produce bloom, twigs and foliage.

When the cane sugar reaches its destination, the fixing process is the reverse of the dissolving process, the cane sugar being split into fruit and grape sugar, and these sugars are excreted as honey, or, by theloss of water and molecular rearrangement, become cellular tissue.

Afterthe tree has perfected its foliage, it begins the slow process of elaborating its seeds and storing starch for the next season's root and leaf growth. This is quite a different process.

The hair rootlets dissolve food elements in the soil, or seize those that come to them, and these are carried as acids to the foliage. In the foliage, the acids are de-oxydized, the life principle of the plant having, through the chlorophyll or green principle of the leaves, the power in sunlight, of absorbing carbonic acid gas from the air and throwing off oxygen, thereby changing the acids to starches. The starches are still further de-oxydized to essential or fatty oils, and these are conveyed with the sugars to the seeds, or are reduced to starch in the tissues and stored up for future use.

Now, the digestion of plants and animals is entirely opposite. The tissues of animals are nitrogenous, of plants carbonaceous. Animals oxydize their food, plants deoxydize. An animal is made fat by absorbtion of carbohydrates, a plant by albuminoids, and either animals or plants, when overfat, are liable to diseases and parasites.

We will, therefore, now consider the albuminoids and the elements that influence health or disease in the citrus. The albuminoids, compared with the carbohydrates, are highly complex and complicated substances, and their study has been difficult.

It was formerly supposed that nitrogen was assimilated by plants only as nitrates, except the infinitesimal amounts that may be absorbed by the leaves as ammonia or nitric acid. Recently, however, pot culture has demonstrated that plants thrive well on nitrogen from this source.

The biologists who have studied the microbes that form nodules in the roots of leguminosae, thereby stimulating their development, are of opinion that the plants gain the nitrogen by absorbing the excretory products of the microbes. These are normal conditions, but orange trees are often fertilized with organic nitrogen by absorbing the excretory products of the microbes. These are normal conditions, but orange trees are often fertilized with organic nitrogen compounds,

and the decay of these deserves special consideration. You will observe sulphur in 1.9 per cent. of the constituents of albumen. The protoplasm of plants is a form of albumen, and sulphur is a vital element of its composition. The quick decay of organic nitrogen substances is a very complicated process.

The sulphur is lost principally as hydrogen sulphide, which, with a mixture of volatile oils from the decomposed fats, gives the disagreeable odors. The principal ultimate product of insects is urea, which contains no sulphur.

Putrescine, cadaverine and mydatoxine are common products of bacterial flesh digestion.

Small injections of these ptomaines, in human flesh, are deadly poison, usually giving cholera symptoms. There is no sulphur in these ptomaines.

The poison principles of insect and reptile bites are decomposed albumens, and the evil effects of parasites on plants may be more due to the poison they inject than to nourishment they extract.

I am personally convinced that most diseases of citrus trees are primarily caused by root absorption of bacterial poisons, that partially paralyze or chemically so derange the plant protoplasm as to interfere with and retard the functional transformation of sugar into starch, has the greater liability to diseases. In my own grove I have found no case of foot-rot.

About ten years ago, a darkey built a chicken coop, and kept a dozen or more fowls for several months under the branches of a sweet seedling, in a grove I have charge of. Two years later, I found it half girdled with footrot. I received no special treatment, and is now recovered as well as such a tree can be. To make sure of fowls and fresh eggs when I want them for the table, I keep about three dozen chickens, and I built a hen house from which I could secure the droppings undisturbed. But the hens, in the heat of the day, would congregate under about a dozen trees on the side of the yard next my house, and would keep the grass worn down next to the fence waiting for feed time.

Those trees got very green or fat, some having the die-back, and, although I moved the fence two years ago, some of those trees dropped a good deal of fruit last winter with die-back scab, and my loss in sales, from the quality of the rough, coarse fruit on those dozen trees, was fully $30. A year ago, in March, I put part of my stable and liquid manure on a block of orange and lemon trees, applying to the surface of the ground six forkfuls of rough manure, or two bucketfuls of liquid, in a circle under the ends of branches.

In two or three weeks many lemon trees began to show drops of gum on the trunks and large branches, which was not the case with trees not thus treated.

In the winter I had noticed a few scale insects on the lower branches of two of the trees, and expected the ladybugs to take care of them, but by May the birds had spread them to many trees in the block, and they had increased with extraordinary rapidity. There was practically no scale, however, in other parts of the grove, except on one lemon tree in a low place by the river. Acarus also appeared on those trees plentifully.

There were ladybugs present, but spraying with kerosene emulsion and bi-sulphate of soda and arsenic solution seemed to hinder their propagation, so I stopped spraying to allow them to multiply, and by the end of summer I found them running restlessly over the branches hunting live scale to feed on.

I had more rough-coated oranges from this block than from anywhere else, except the die-back trees before mentioned, and I had a good deal of dead wood to prune, some affected by scale and some not. This object lesson was so forcible that I have decided never again to apply organic nitrogen to my citrus trees, except the small amount I am compelled to use from my chickens, for lack of open ground to keep them in. Were it not that I have been making to some expense fencing two acres with wire netting I would, as a matter of dollars and cents, do without fowls altogether.

Sulphur seems to be as essentially necessary and element of healthy albuminoids as nitrogen. Sulphur, certainly in my experience, is the great protoplasm stimulant, and is more necessary for sweet fruit than phosphoric acid, which performs an important office in the movement of cane sugar. The daily overflow in using the artesian water from my kitchen hydrants, caused majoras and bloods on the tree next to it to be sweet over a month in advance of those elsewhere, that otehrwise were well irrigated before the rainy season and had the same fertilizing. I have had similar results from using an excess of sulphate of ammonia with a deficiency of potash.

In this case, the alkalinity of the ammonia seems to assert itself when the salt is decomposed, and to take the place of potash as a base for the acids, while the coversion to sugar is much more rapid. It is easily possible to give trees too much nitrogen in this form also.

Bu-sulphate of soda is the most efficient fungicide that has come under my observation. It kills the mosses and lichens on the trunks of the trees so that they rot off during the summer rains. Two years ago, my three large bearing sour orange trees, both leaves and fruit, were completely infested with scab; last year very little developed, and this season I have to look close to find any new leaves bearing scab nodules.

I had some small, slow-growing orange trees badly stunted by the 1886 freeze, and, two years ago, they showed considerable of the silver-gray fungoid appearance that accompanies limb blight, and branches thus affected began to die back. Though they bore a heavy crop of fruit last year, and had scant foliage to perfect it with, owing to the March freeze of 1890. uet those trees are holding their own, and many are losing the silvery appearance and are improving.

In my conclusion, I will predict that future scientific advance in horticulture will be made by comparative study of the effects of sulphur on the organic compounds. Respectfully submitted,

E. S. Hubbard,
Federal Point, Fla. Chairman of Committee.

The following is the chart referred to by Mr. Hubbard in his article:-

HYDROCARBONS.

Gases.

Methane (marsh gas). $CH_4$.
Ethane, C2H6.
Ethylene, C2H4.

Alcohols.

Methyl (wood alcohol), CH4O.
Ethyl (spirit alcohol).C2H6O.
Ethylene glycol, C2H6O2.
Glycerol (glycerine). C2H8O3.

Acids.

Succinic, C4H6O4.
Malic, C4H6O5.
Tartaric, C4H6O6.
Citric, C6H8O7.

Carbohydrates.

Starch and gum (C6H10O5)n.

Glucose.

Fruit sugar,)
Grape sugar,) C6 H12 O6.
Cane sugar, C12 H22 O11.
Cullulose, C12 H24 O12.
Saccharic acid, C6 H10 O8.

Volatile Oils.

Benzine, C6 H6.
Naphthaline, C10 H8.
Citrine, C10 H16.
Hesperidin, C22 H26 O12.

Fats.

Palmatin, C51 H 98 O6.
Olein, C 57 H104 O6.
Stearin, C57 H110 O6.

ALBUMENOIDS.

Leow three times this formula.
C72 H112 SN18 O22.
53.5 per cent.,7 per cent., 1.9 per cent.,15.5 per cent., 22.4 per cent.

Urea, Ch4 H2O.
Uric acid, C5 H4 N4 O3.
Cadaverine, C5 H14 N2.
Putresine, C4 H12 F2.
Mydatoxine, C6 H13 NO2.
Nicotin C10 H14 N2.
Morphin, C17 H19 NO3.

Quinin, C20 H24 N2 O2.
Strychnin, C21 H22 N2O2
Nitric acid, NHO3.
Ammonia NH3.
Ammonium, NH4.
Ammonium carbonate (NH4)2C.O3.
Ammonium sulphate(NH4)2S.O.4.
Ammonium chloride, NH4cl.
Ammonium nitrate NH4O2.
Ammonium nitrate NH4O3.
Potassium oxide, K2O.
Potassium nitrate, KNO3.
Potassium carbonide, K2CO3.
Potassium sulphate, K2SO4.
Potassium chloride, Kcl.
Sodium chloride, Na cl.
Sodium carbonate, Na2CO3.
Sodium sulphate, Na2 SO4.
Acid sodium sulphate, NaHSO4.
Sulphuric acid, H2SO4.
Sulphur dioxide, SO2.
Hydrogen sulphide, H2S.
Water, H2O.
Hydrochloric acid, H.Cl.

C, carbon; O, oxygen; H, Hydrogen; N, nitrogen; S, sulphur; K, potassium; Na, sodium; Cl, chlorine.

## DISEASES OF THE CITRUS.
## (EXHIBIT W.)

Mr. Williams.-

Mr. President and Members of State Horticultural Society:

When I first commenced "reading up" in orange culture, some twenty odd years ago, I was told that the orange tree was not subject to any diseases. One writer, who claimed to know all about it, said: "An orange grove, once set, is good for at least seventy-five years, and the only insect enemy one has to contend with is the common scale, which can be warded off and kept at bay by simply keeping the trees up to a high standard of health and vigorous growth." For a few years I was deluded with the truth of this flattering idea, and then I heard from afar off, on the St. John's river, and from the interior of the State, a faint whisper full of alarm and dismal foreboding, that there was a disease attacking the young trees, which, for want of a better name, was called "die-back." After posting myself on its general appearance and peculiarities, I soon found that I, as

well as my nighbors, had a few cases in my young grove. Then I awoke from my dream-like delusion that the citrus family of fruit trees was exempt from disease, and I have kept awake ever since. Those of us who were engaged in growing oranges as far back as 1875 will remember the meeting of the "Fruit Growers' Convention" at Palatka, in November of that year. The report of that meeting, as published in the old Florida Agriculturist, was of absorbing interest to us new beginners. The subject of "die-back" was discussed at length, but, alas! we were all novices in the business then, and we could only theorize and experiment. For several years after this the disease was discussed through the press, and one gentleman wrote a long and exhaustive treatise on it, but now it is seldom mentioned, or, if so, by some new-comers, who, in part at lease, have to travel over the same path that we trod with such painful and nervous misgivings so many years ago. If I were asked to-day what to do for this disease, I should say, paradoxical as it may seem-nothing. The more you prune and cut away the diseased wood, the more persistent will be the disease, [illegible] If, however, you must do something, we would advise: - Dig up the tree and replant it, giving both top and root a severe pruning. It is a disease that any young tree is liableto take, and is, no doubt, caused by what we might term indigestion; taking up food that is not immediately available for healthy plant life.

The "red-rust" is so closely allied with the "die-back" that it is often confounded with the latter, and they can aptly be called twin sisters. This, too, is a disease of the soil. I have never seen it in the gray hammock land, while on the red, or coquina soil, it is very common. Every one, I suppose, knows this disease. The tree has what we call the "calico" or variegated leaf, the bark on the young growth splits open, the sap exudes and turns of a red, rusty appearance, the fruit is blotched and blackened in spots, and is liable to split or fall prematurely. There is a narrow ride extending half the length of Rock Ledge hammock, on which all the trees have this disease. As a remendy I would suggest bone-beal and sulphate of potash as a fertilizer, avoiding all ammoniated manures.

A disease far worse than any mentioned, is "mal de goma," or foot-rot. I am happy to state that I have never had a case of it. It is a well established fact that this disease is more liable to attack the sweet seedlings, or trees budded on sweet stock, than any others. Fortunately, my trees are, with a few exceptions, budded on wild or sour stock. While this subject is under discussion, we hope to hear from those who have this disease, and learn the results of the oxide of iron experiments.

The last in the quartette of disease of which we shall speak is the "blight." This is, to us, the most serious and dreaded of all. It is well named. The finest and most prolific trees in the grove take the disease- it comes like a thief in the night, without warning; the prospect for a crop of fruit is suddenly blighted, and all our hopes of revenue become in reality only "dissolving views."

A year ago, at our annual meeting, this disease was pretty thoroughly discussed, and a resolution was passed calling on the commissioner of agriculture to help us. Our past experience proved conclusively that if we would combat this disease successfully and find a remedy, we must have an expert microscropist on the ground to study it from its incipience. In answer to a communication from our secretary, Assistant Secretary of Agriculture Willets told us the agricultural department could not help us, owing to the fact that the appropriation for that purpose was exhausted. I immediately wrote to several personal friends in Washington, among them Prof. H. E. VanDeman, the pomologist of the department, asking as a special favor that they would see the assistant secretary and show him the importance of immediate action in the matter. Others, including our secretary, interested themselves, and the result was that two experts, Dr. Smith and Prof. Swingle, were sent down. They took a brief survey of the situation - more, as Prof. Swingle told me, to see if the disease was of sufficient importance towarrant a careful and systematic study than aught else. In their report they urged the importance of immediate action in the matter, both for the foot-rot and the blight, and that, I think, is the status of the case today.

As I have already said, and as far as my experience goes, this is the most serious disease of ant that the orange grower has to contend with. It has no choice in its victim; it attacks the sweet seedling as readily as the tree budded on sour stock. The much-prized pomelo, or grapefruit, is not exempt. A tree that yesterday gave promise of a long and profitable life, to-day shows signs of the disease, and is doomed. The importance of the subject warrants us to go into details. The first sign of disease to the naked eye is a wilted appearance of the tree, as if suffering for want of moisture. The leaves are small, nearly all of a uniform size, and turn two or three shades darker than their normal condition. If in the early Spring, the tree expends all its energies in a mass of immature bloom. Sometimes one large limb will take the disease, and it may be a year before the balance of the tree shows it. The leaves drop from the smaller twigs, and slowly but surely the whole limb dies away. The trunk, from the ground up, and the larger branches near the body, throw out a profusion of water-sprouts.

Whether the disease is in the roots or in the tree itself is a question. Sections of the roots sent to the agricultural department showed no signs of disease, while cuttings from the diseased limbs developed, under favorable conditions, vast quantities of fungus. In my crude experiments I have tried a great many remedies. Mr. A. Brady, of LaGrange, thought he had discovered a cure in ball-potash, by washing the ground in a strong solution and drenching the tree thoroughly. I have tired it with no beneficial results. I have also tried sulphate of iron and flowers of sulphur, dissolved and used as a spray; Bean's Insecticide of extra strength, two gallons to forty of water; excessive fertilizing, salt, lime, saltpetre, etc.

Perhaps the most promising of all was this: I hoed away the top soil down to the main lateral roots for over twelve feet away from the tree; in this sink I depositied one large one-horse load of raw vegetable muck, on this I sprinkled over a bushel of air-slaked

lime, threw the dirt back, and turned loose a one-inch hose on until all was thoroughly saturated. I made this experiment last spring, on a tree that took the blight five years ago. The whole top had been sawed off four years ago, and the new growth looks fairly healthy, and matured a few fine oranges this season. I look forward to this season's growth with interest.

I assure you, Mr. President, that words fail to convey the dread I feel when I contemplate this disease. Fortunately I have not suffered much as yet, but I know three groves where from fifty to seventy-five per cent. of the older trees have died. Is not this enough to arouse our fears and incite us to immediate action? If the agricultural department will not help us, let us help ourselves. An expert must locate on the ground to study the disease carefully. Whether any remedy can be found is, of course, a question. Like the pear-blight or peach-yellows, it may be incurable; but the experiment is worth making. My plan is to hire an expert microscopist, and pay him out of our own pockets.

"Those whom the gods would help, must first help themselves."

H. S. WILLIAMS.

Mr. Williams.-In connection with this report, Mr. A. Brady, who was here with us, but who had to leave this morning, wrote a paper and asked me to read it for him.

ORANGE BLIGHT
(Exhibit X)

I treated three trees in 1891. I had on hand some potash, bought several years before. This gave out before the treatment was over. Had to buy potash, which was in several particulars different.

One tree had been diseased four or five years, the second two years, the third one year or less.

Tree No. 2 bloomed sparingly, and shed completely, early in Spring before treatment. Afterward, in May, it bloomed again, good, healthy flowers, and retained fruit, but fruit, when ripe, was oblong.

All the trees, about July, were apparently cured--that is, they had matured their former growth, which seemed perfect in wood, leaves and color.

During the autumn, and especially in their later growth, I saw that the trees were not doing well. They lost the lustre of their leaves, the growth was not good, and at this time (1892), they look as they did in 1891. I have done nothing for them since August, 1891.

The treatment was the application around the tree of ball potash, a one-pound ball in forty-five or fifty gallons water, once a week, for three or four weeks, then at longer intervals, until the tree was cured.

During about ten years all trees treated recovered, except the last three.

Query.--Was the failure due to change in composition of potash, or is there a real blight and a disease that looks like it?

A. BRADY

Mr. Mead.-I will say that most of the ball potash is composed of caustic soda. It is so much cheaper; and, possibly, that might have the effect stated. I use a mixture of sulphate of potash and quicklime. It is highly probable that in the soil the sulphuric acid would go to the lime, the potash assuming the caustic state.

Mr. Healy.-I would like to ask Mr. Hubbard how he uses bi-sulphate of soda.

Mr. Hubbard.--Eight pounds of bi-sulphate soda to fifty gallons of water, and sprinkle on the trees. It has to be used with some caution, as it is pretty strong. If you get it on too heavily, it drops old leaves sometimes.

Mr. Williams.-I would like to call on Mr. Swingle.

Mr. Swingle.-I did not come with a paper. I have been in the State since the 25th of March, this year, I have been studying almost entirely this disease which you have called the "blight". I consider it the most dangerous of all. It is a disease which is confined to no particular locality. I find it throughout the State. The department is anxious and willing to investigate it. The secretary of agriculture has considered several of these diseases, and especially the blight. He has asked for an appropriation of $10,000 to be taken from something else, as the present Congress is not favorable to any new appropriations. This investigating the diseases of the citrus fruit is a very difficult undertaking, I assure you. We have been in our division since 1886. We find the orange blight entirely new, and different from any other known disease of any tree in the world. The blight is a very serious thing, as it will destroy a whole grove. It is a subject which should be looked into by the orange growers of Florida.

(Exhibit Y)

You can't turn a grindstone without a crank. Could I make a speech, I think I could throw a little light on this much-harped-on subject. Will try, anyway. I think I am right in saying, the orange tree is our largest and most long-lived fruit-bearing tree. Nicholson's Encyclopaedia on Gardening mentions orange trees that are over six hundred years old * * * A tree near Seffner is two feet and a half in diameter, and is said to have produced twelve thousand oranges at a clip. I am told of trees in Cuba, planted over three hundred years ago * * * Only four trees of them occupy an acre of ground, and I dare not tell

of the oranges they produce, for it is more than has yet come from any one acre of land in Florida.

Of this so-called foot-rot, one hardly takes up a paper but there is a foot-rot head-line. What causes it? What cures it?

Now comes a new one on us, blight (dry wilt), that is to clean us out; that is to settle the over-production question, unless our government can send us down a man from Washington to help us out.

I have been in a great many of the foot-rot groves; I guess I have seen it in all its phases. I have been in the blight sections; the trees often have been fine ones, have given the planter lots of oranges, and I don't wonder that he cries out for help. I have found them on land that has solid rock or hard-pan below, and just about soil enough to last a tree ten years; these are usually fifteen or twenty feet apart. The tree-pruner had been there, and that plow that Dummet took on his shoulder and threw into the lagoon, so many years ago, has been fished out, and it has torn up the roots the same as when it ruined his grove; there are many of them (the roots) wrong end up, not quite the right position for roots that have been feeding those limbs I find dying with blight. And again, O Lord, O anybody, to help us out of the terrible fix our bullheaded ignorance has got us into.

It has been said of man that he is fearfully and wonderfully made; and, with all the boasts of scientists, they cannot tell us how the blood circulates in his body. The idea advanced by a woman (God bless her) is the most plausible one. So with the physiological organization of the tree, may we not say it is quite as intricate as that of the human organism. The circulation of the sap is also in the dark. There is enough, though, in both cases; did we study the laws that govern, we need not go far wrong.

We meet with failures many times in planting on land nit suited to the orange. I do know that a large portion of our orange groves are on lands where success is impossible. Plants are endowed with instinct, the same as animals. There are soils that some plants will thrive on, while to other plants they are poison. Oaks and hickories often are on land that is unsuited to the orange, and failures come from that cause.

The big cause of all the ills our orange tree is subject to, is in wrong planting of this long-lived tree; this tree that I have seen at twenty years old, with a trunk two feet in diameter and a spread of limbs of thirty-five feet; this tree with its countless leaves, and little rootlets, without number, that operate in unison with those leaves, to carry up from the soil the mineral elements that are so essential to the perfect fruit, as also to drink in from the air and sun, the carbon, the sugar, and the coloring of the rainbow.

I repeat, the trouble comes in planting so close together, that when it has got, perhaps, to the first milestone in this long-life journey I have told you of, it has already used all the room first given it; the ground is so full of roots, they are intermingled so they could not be straightened out with a fine-tooth comb; the whole thing becomes clogged and choked up, and then--what?

We all know that where any kind of trees are so close that the limbs interlock, those limbs die; well, what of the roots, don't they die too? Assuredly they must, and trouble comes; die-back, foot-rot, blight, dry wilt, red spider, scale, and all that tribe of fungi, insects and parasite diseases come in to help in the death of the trees.

Now, the remedy, and only one, for this whole thing of which I have shown you the cause, is in a proper selection of land, and planting the trees far enough apart. And let us figure out right here. We will start in with the idea that it is best to

be on the safe side * * * I think we best have it far enough that the roots have room, so they need not be running over to rob their neighbors, and so it has room for the sun and wind on all sides of it, at least twelve feet from limb to limb, which will carry us out to fifty feet, seventeen trees on an acre. It seems terrible to the most of you.

All there is in it is this: when twenty-five years old, the seventeen trees will bear more oranges than the one hundred and eight which are twenty feet apart, and, if properly treated, they will not be as ready to die quite, as is so often seen with the closely planted trees. Florida is an orange country, and she has men with brains to develop it.

Mr. Magruder.-I move that we memorialize Congress, asking for an appropriation of $10,000, for the special purpose of investigating the blight of the orange and other diseases.

President.-Will Mr. Magruder put his resolution in writing?

Mr. Love.-As I introduced the resolution passed in Jacksonville, in regard to this appropriation, I suppose that I should say something. The way in which we did was as follows: we had a number of copies of the petition made and they were sent by the society to all parts of the State, and by the person who signed them, back to the secretary, who sent them to Washington. I received a letter from Mr. Bullock, in which he stated that he would use his influence to get this appropriation; that he would do all that he could. He will do whatever is in his power to get this appropriation made.

Mr. Anderson.-We want to use all of our influence to get this appropriation. If we do not have this disease, and all diseases of the orange investigated, we will not have anything to market. We have got to have it.

President.- It is moved by Mr. Magruder, and seconded, that this association memorialize Congress for an appropriation of $10,000, for the purpose of sending a special agent to investigate the disease known as "the blight", and other diseases of the Citrus family.

Motion carried.

Mr. Love.-I will make a resolution that this convention do send a delegation of three, to confer with the commissioner of agriculture in Washington.

Mr. Phelps.-I think all that would be necessary, would be for us to show our personal interest in the matter. I think that a committee of one can do as much as a committee of three. I think that as Mr. Swingle is one of us, and is also connected with the department, he can do a great deal for us. I trust in Mr. Swingle, and I think he is the man whom we should have, to try to get this appropriation for investigating the diseases of the orange tree passed.

Mr. Swingle.- I think that the department has done the best it could. Everyone in Washington knows that it is a very easy matter to pass resolutions, and I think that they would not have as much influence as a man in person.

President.-The question is on adopting the resolution, that this society send a committee to Washington.

Motion lost.

Mr. Bostrom.-I move, sir, that the senators and representatives of our State be urged to use their best endeavors to get the appropriation of $10,000 for the purpose of investigating the Citrus diseases.

Motion carried.

Mr. Cooper.- If there is any member here who has cured foot-rot, I would like to hear from him.

Mr. Hart.-I have been at work on it ever since our first meeting in Ocala. I had 62 trees which were affected with it. I have not now a single tree that shows it. The trees which were nearly gone, are now apparently sound and healthy. I treated them with sulphureous acid and water, half and half. I dug the dirt away from the roots, washed them with a force pump, and then put on sulphureous (not sulphuric) acid and water, and afterwards sprinkled flour of sulphur under the trees. Those trees are apparently sound today. I dug about two feet down, and exposed the tap-root. I only treated part of the trees with acid and sulphur; I left the roots exposed; I left them that way until this day. They are apparently sound and healthy. In some places, where the dirt was washed back by rain, the foot-rot started again, so that I am satisfied that the mere fact of exposing the roots has been with me an absolute cure. My loquats were affected, also. I had one which had only a few small roots left on it, and it would lie in whatever position the last wind left it. It was absolutely worthless, in my opinion, and yet, just as an experiment, I treated that tree in the same way. Today it is sound, has put out new roots, and is firm in the ground.

President.-It is moved and seconded, that we proceed to the next subject. As I hear no objection, it is so ordered.

REPORT OF THE COMMITTEE ON TRANSPORTATION

(Exhibit 2)

Major Rooks:-

We, your committee on transportatinn, respectfully submit the following report:

No doubt, there are fresh in the minds of every fruit grower and vegetable grower in the State, the disasters which he has met in marketing his crops, and the unsatisfactory way in which his products have been handled, both by transportation companies

and commission merchants; also the disadvantages which he has been laboring under, on account of high freight rates, and not having learned how to pack, handle and ship his crop, so as to reach the different markets in sound condition, to bring remunerative prices, and pay for his labor over the cost of producing and marketing.

These are the different problems which must be solved before these two great industries of Florida can be said to rest upon a sound business and paying basis. The tendency now in every direction is towards aggregation of capital. Large establishments are swallowing up small ones on every side. Sub-division of capital can hardly secure us now the bare cost of living. Combinations are the order of the day, and popular sentiment is gradually accepting the situation as a foregone conclusion, that sub-divisions of industries stand no chance against organizations in one direction. Organization and cooperation is the one instrument now generally recognized and made use of in successful business affairs. Fruit and vegetable growers must organize and cooperate, that they may deal with existing lines of transportation, and be dealt with upon a business basis. Individuals are helpless, and can do nothing.

The bane and curse of the present situation is that there is no power among producers that can make terms with transportation lines, or that can prevent a thousand shippers from shipping all to New York the same week, or all to Chicago the same day.

The fruit growers must not only come together and pledge each other to work together in all matters of common interest, but they must put up their money to make these pledges of any binding effect or practical value.

Organization not based upon corporate power and backed by money, are but ropes of sand. The importance of each fruit and vegetable grower taking

a personal money interest in some compact organization of his own, cannot be too strongly urged. The benefits gained by the organizations known as the Florida Fruit Exchange, Orange Growers' Union and Home Market are well recognized. There is not a fruit grower in Florida, no matter whether he favors these institutions or not, who has not gained financially on account of the work accomplished through them, and yet, for want of general and united support on the part of the growers, these institutions have largely failed to accomplish the purposes for which they were organized.

In the judgment of your committee, in order to solve these problems, the orange growers must come together under one strong directory, controlled by themselves as stockholders, backed by corporate power and an abundance of capital. If there be no other or better organization, let the orange growers all unite upon the chartered institution known as the Florida Fruit Exchange, which is an association of orange growers, officered and managed entirely in the interest of the orange growers, with an authorized capital stock of $500,000, and which has had eight years of practical experience. Let each grower subscribe to its capital stock, thereby becoming identified in its control, and thus giving it power to make satisfactory contracts with existing transportation lines, or if that cannot be done, then to charter and control its own lines of steamships to transport their fruit to market.

This seems to your committee the only practical solution of the transportation problem.

Railroad Commission

We also most earnestly urge the re-establishment of a Florida railroad commission, as the only bar before which the shippers' rights can be heard and enforced, as against the transportation lines now doing business in our State. The railroad commission

of Florida has been abolished, while in our sister State of Georgia the railroad commission has been upheld by the strong arms of the people, and strengthened by decrees of interstate commerce commission, until it has become a power to regulate traffic and rates in that State.

A recent issue of the Atlanta Constitution said: "So wisely and well were the affairs of the Georgia commission administered, that many additional powers were granted it from time to time, and now it has power to regulate express companies and sleeping car corporations."

CONSIGNMENT.

It is a well established law that competition among the producers or their agents, must of necessity ruin prices. The plan of promiscuous shipping to commission men, who compete against each other in the sale of our fruit in the market, has in the past despoiled the grower of millions of hard-earned money, and if continued, with the certainty of annually increasing crops, will ultimately ruin the great orange growing industry of our State.

Does it not seem astounding to us that where we are all engaged in the same industry, that instead of coming together and using our capital as a unit, we should regard each other as rivals, and by consigning our fruit to commission houses, go into the market to compete against ourselves, thereby producing "gluts" and sacrificing our products? For these reasons we earnestly advise against the promiscuous consignment of fruit on commission as unsatisfactory, unbusinesslike and ruinous.

O. P. ROOKS,
Chairman of committee.

Mr. Fabyan.- I heartily endorse that part of the report in which your comittee says that the State of Florida did a very unwise thing in reference to the railway commission. Mr. Chairman, I have invested a great deal of money in Florida, and have more, but I cannot continue these investments, unless I

have some bar between me and the transportation companies. I do not feel that I can take the moral responsibility upon myself to spend the money of my associated while affairs are in this condition. Where I paid 25 cents for the delivery of fruit before the commission was instituted, I paid 6 cents after. Now, I am paying the old rate of 25 cents. I will put out no more money until I find that there is to be a railway commission of some kind instituted in this State.

Mr. Mead.- I would say that in some cases the railroad commission made the rates higher than what the railroads themselves were willing to have them at. Down near my place, the railroad would not give us low rates, but told us to start up some sort of opposition. So we built a little road, from there to Jesup, for about $6,000. That railroad is today sir, the best paying railroad in the State of Florida, although nothing has ever run over it except an $18 pole car, with a negro on it. The South Florida immediately put down their rates when they saw that we could send them to other roads. The commission wished well, but they had no power, apparently, to do what was needed.

Mr. Williams.- I move, sir, that it be resolved that the sense of this society is that the Florida railroad commission should be re-established, with sufficient power to enforce their commands.

Mr. Love.- I find that you gentlemen on the St. John's River do not realize the importance of having a railroad commission. I know that the railroad commission allowed the railroad 15 cents from Sanford to Jacksonville while the steamers carried them for 10 cents. Then the railroads carried them for 10 cents, and did not come up to what the commission allowed them. We paid 25 cents a box from Leesburgh to Gainesville, a distance of seventy-five miles. The railroads carry a box of oranges from Sanford to Jacksonville, a distance of over one hundred miles, for 20 cents. The commission made them reduce it to 16 cents. They did that for a while, but in the Fall of 1889, they advanced the

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Mr. Mead.- I would say that in some cases the railroad commission made the rates higher than what the railroads themselves were willing to have them at. Down near my place, the railroad would not give us low rates, but told us to start up some sort of opposition. So we built a little road, from there to Jesup, for about $6,000. That railroad is today sir, the best paying railroad in the State of Florida, although nothing has ever run over it except an $18 pole car, with a negro on it. The South Florida immediately put down their rates when they saw that we could send them to other roads. The commission wished well, but they had no power, apparently, to do what was needed.

Mr. Williams.- I move, sir, that it be resolved that the sense of this society is that the Florida railroad commission should be re-established, with sufficient power to enforce their commands.

Mr. Love.- I find that you gentlemen on the St. John's River do not realize the importance of having a railroad commission. I know that the railroad commission allowed the railroad 15 cents from Sanford to Jacksonville while the steamers carried them for 10 cents. Then the railroads carried them for 10 cents, and did not come up to what the commission allowed them. We paid 25 cents a box from Leesburgh to Gainesville, a distance of seventy-five miles. The railroads carry a box of oranges from Sanford to Jacksonville, a distance of over one hundred miles, for 20 cents. The commission made them reduce it to 16 cents. They did that for a while, but in the Fall of 1889, they advanced the

rate to 25 cents per box. The agenst told us that that was what the railroad commission allowed them. We afterwards found out that the commission did not raise the rate. The citizens of Leesburgh and another town filed a petition, and a bill was brought in the Supreme Court to make the roads conform with the rates of the railroad commission. Now, on those lines of road there were probably 500,000 boxes of oranges shipped. We will say that the rate of 12-1/2 cents was allowed to the roads by the commission. That subtracted from the present rate and multiplied by the number of oranges shipped, would make $62,500. It is estimated that the railway commission cost $10,000 per year. That would run the commission for six and a quarter years.

Mr. Wright.- I am in favor of a commission with absolute power to make laws in regard to transportation.

President.- The question is on passing the resolution of Mr. Williams, whie has been seconded.
Carried.
Adjourned until 2 p.m.

AFTERNOON SESSION.- 2 P.M.
Meeting called to order by President Adams, at 2 o'clock.

COMMITTEE ON VEGETABLES.
PRODUCTION OF FLORIDA VEGETABLES.
(EXHIBIT AA.)

Mr. President, and Members of the State Horticultural Society:-

In the short time allotted to the discussion of vegetables, I do not think that justice can be done to any branch of that important industry, and I shall confine myself to a statement of a few of my observations of the last two years.

The lessons of the severe frosts and over production of cabbage during the season of 1890-91 have not been barren of results. The cultivation of the tender vegetables, beans and tomatoes especially, has been forced into the comparatively frost-proof locations, except where artificial means are used for protection.

The over production of cabbage in the season of 1890-91 was a blessing in disguise, just as the over production of cotton of the past year will prove a blessing to the cotton growers. It has shown to the vegetable growers the folly of the one-crop system, and this present season has seen a greater diversity of vegetable crops than any previous one. The benefit of the diversification is seen by a careful examination of the vegetable market reports, which show good prices in all lines of vegetables up to date. Owing to an unfavorable season the vegetable crop has been a comparatively small one, which has much to do with the increased returns, but the fact remains, that although certain crops have suffered far more than others, this stiffening of prices is proportionately distributed among all the different lines of vegetables, and I believe the industry to be in a more healthy condition than for some years past.

In this diversifying process several new crops have come to the front.

Thanks be to E. O. Painter for his earnest efforts in behalf of the Bermuda onion, and thanks be to that much defamed monster, the McKinley bill, for the protection it gives this, as yet, infant industry. More than 200,000 bushels of the mild foreign varieties of onions have been annually imported into the United States; Florida can and will supply this demand, and if the present increase in the crop is kept up, it will be but a few years before Florida will be supplying the entire demand. The Bermuda varieties are the surest croppers and best keepers. The giant varieties such as Silver King, Prizetaker, ElPast or Large Mexican and similar kinds have done well in some localities, but are not to be fully recommended for general planting as yet. The Irish potato crop is one of growing importance, and is one of the most valuable, for the reason that when the price for new potatoes falls below the paying mark in the North, we have a ready market within the borders of our own State, at prices that pay at least 25 per cent. above the cost of economical production. The trench system is the one generall used, and should be the only one where there is an absence of irrigation. There is always more or less complaint about

seed rotting in the ground before starting. This is easily overcome with a little extra trouble on the pary of the planter. After cuttingyour seed to the desired size, dip the cut portion into air-slaked lime, then spread on a dry floor where there is a good ventilation, and let stand for a week or ten days. At the end of ten days the potato part will be shrivelled and the eye well started. The lime stops any loss of vitality through bleeding from the cuts. At this state they should be planted in the usual manner. Truckers who use this method get a stand of 95 per cent. on an average.

I would caution truckers against planting the potato known as "early Sunrise." It is an extra early variety and its quality is unexcelled, but as a shipping variety it is usually a failure. With three years' experience in handling it, I find that it decays in one-half the time that the other standard varieties do. I would also caution them against trying to raise a Fall crop of potatoes from September planting of Northern grown seed stock of the same Summer's growth. Save enough from the previous Spring's crop of your Florida growth, and pack them in dry sand. Overhaul them occasionally, and remove any that show signs of decay. By saving your seed in this way and treating with lime before planting, you are reasonably sure of a good stand in the Fall.

The cultivation of egg plant has been steadily increasing the last three years, and the demand has increased proportionately. For either Spring, early Summer or Fall shipments I believe it to be a most valuable crop. The egg plant is a native of Northern Africa, and can be produced to perfection here during our Summer season.

Many planters, not understanding the characteristics of the egg plant, make a complete failrue in the beginning. The seed will not germinate freely in a temperature of less than seventy degrees, and, as much of the seed is sown during December and January without the use of hot-beds or other artificial means, the ewaulr has often been entire failure. For those who have not the materials at hand for a hot-bed I would suggest this:- Sow the seed in a shallow box containing good soil, care being taken to have a sufficient number of holes in the bottom for drainage. Place the box

over an ordinary baking pan, which should be as near the size of your seed box as possible. Keep your pan about two-thirds full of water, and then keep an ordinary kerosene lamp burning under it constantly until the seeds have germinated. The heat from the lamp will keep the water in the pan at an even temperature, which in turn will impart to the soil in the box the necessary degree of heat. The seedlings should be transplanted twice, to make them "stocky" before setting in the open ground. It is necessary that the plants be kept growing constantly for if checked by cold, insects, or lack of cultivation or fertilizer, the crop will be either a partial or total failure. It is a crop that requires heat, heavily fertilizing and constant cultivation. The improved strains of the large purple variety are the ones to be planted for the shipping crop. An acre contains 4,840 plants, set three feet apart each way. Each plant under good cultivation produces from five to eight "eggs," weighing five or six pounds each. I have been told lately, by an egg-plant grower, that if the plants are cut down the root after the early Summer crop has been gathered, they will again come up and produce a second crop for Fall shipment if another application of fertilizer is made. In gathering, the "eggs" should be clipped and wrapped in brown paperp They should be shipped in barrels. Fancy grades of egg plant have brought as high as $16 per barrel in the Eastern market this past month.

Two other vegetable crops I would like to call attention to--blood beets and celery.

The prices obtained for beets is not large, but the immense quantity that can be grown per acre makes it a profitable crop to grow. They require rich ground and plenty of moisture, and to be grown successfully they must have these conditions. These conditions, if made artificially by fertilizer and irrigation, answer just as well as a naturally rich and moist soil. No one will accuse us of having a rich and moist soil on the sand hills of the interior, yet I have seen beets grown there this Spring well fertilized and irrigated, that were second to none in size and quality that I have ever seen North or South.

In most parts of Florida celery culture is as yet experimental, yet I believe the greater part of our flat woods and much lands of our State are adapted to its culture. A number have already made its culture a success, but I believe the principal thing to be learned by the Southern celery growers is to properly blanch the celery. Fully half the Florida celery is not blanched more than half the length of the plant, and this is a condition that the Northern consumer does not appreciate. Florida celery comes into market at a time when there is no competition, the stock of Northern grown being cleaned out. The last market report from New York gave the price of 70 to 80 cents per dozen for well blanched celery.
Interlachen, Fla. H. G. HASTINGS.

Mr. President.- Mr. R. A. Mills is not able to attend this meeting because he is a member of the Board of County Commissioners of Orange county who are now in session. He has sent his report, however, to the secretary, who will please read it.

Mr. Mill's report read by the Secretary.*

Mr. Phelps.- I would like to hear from a man who has had more experience with the Bermuda onion than any other man in Florida,- Mr. E. O. Painter, of Deland.

Mr. Painter.- "In (U) onion there is strength," therefore we have been raising them. My experience with the Bermuda onion dates back five years. I commenced with a very small patch. My garden, where I get my onion from, is located upon high pine land with no sub-soil nearer than ninety feet, therefore, we have to depend entirely upon fertilizer for the growth. My plan has always been to prepare the ground before the first of November, so that when the first rain comes about that time, the seed can be planted, thereby insuring a good stand. In regard to cultivation;

(*Note. Mr. Mill's paper being quite lentghy, and, as he states in its heading, a compliation of a few interesting paragraphs from various authors, it isby the direction of the Executive Committee omitted from this work to give room for original matter.)

as soon as the onions are up and large enough, I put a Planet, Jr., to running between the rows, and keep this up constantly for some time in order to get the soil well stirred up. I give them a little fertilizer at the time. I do not believe in giving them all they want at tone time. I spread the fertilizer on all during the season. I don't believe in the idea of a feast one time and a famine another. In our pine soil we have an advantage over the lower lands in being able, where we have irrigation, to control the time fo ripening. We all know that our dry weather is in March, which is just about the time the onions commence approaching maturity. By not giving them water they get ready for market about three weeks earlier. Instead of taking the onions which I shipped last week were in the ground the Saturday before. I do not wish to raise a very large onion, as I only want them a good market size, and I do not consider the very large ones a good selling article. As regards my experience in shipping; the prices I have received in New York and Philadelphia markets has been from $2.50 to $3.50 per crate. Two years ago I sold all I had except ten crates, for the sum of $3.00 per crate. The demand for the Bermuda onion is now very great, so much so that when my first shipment was received this year, the man to whom they were sent telegraphed me to "keep them coming." I could not send him as much as he wanted. The Bermuda is a good bearer. During the five years previous to last year I have never been without onions on my place. We use seeds of our own seedsmen in preference to those sent from the North. The Bermuda grows fast. In a week's time it will make a root of five inches. You need irrigation on high pine land. I have a wind-mill for hoisting water, and I apply with hose; I have sprinklers as well as hose, but only use them when I have an abundance of water.

Mr. Bacon.- What month is the best time to get the best prices from the Northern markets?

Mr. Painter.- The earlier you can get them there the better. Mine were sold for $3.50 at the first of the season. The Bermuda onion, put up properly, makes a very pretty package. I have transplanted them,

but have promised myself never to do so again; I do not think that the pure Bermuda seed can be gotten before the first of October. Any seedsman offering pure Bermuda seed before that time is either offering you last years seed, or they have not got it. I use fertilizer made of sulphate of ammonia, sulphate of potash and dissolved bone. I am only positive in my statements as regards my own garden. I do not believe that on the lower lands transplating would have succeeded any better. You want to get your onions ripened early. The prices for onions have fallen in a week's time from $2.50 to $1. It may sould improbable, but I have put about $80 worth of fertilizer to the acre.

Mr. Crane.- I wish to ask about the reason of the different kinds running to seed.

Mr. Bacon. It may be caused by not transplanting enough. A gentleman told me last year that he had transplanted some of his onions three or four times, before they were put down permanently. Possibly that might be the cause of their running to seed.

Mr. Painter. - I have had onion sets go to seed.

Mr. Thomas Hastings.- I am a new comer in Florida, but I do think that there should be more attention paid to the raising of vegetables. I raise some vegetables in our houses. I believe in irrigation plenty of water is what is needed. I have all the water I want, and I have also a clay subsoil. The trouble about Florida is, if a man makes any improvements and wants to get any more land, the owners want to put it so high up. I bought my land for $2 per acre. Natives there now want from $20 to $50 per acre.

Mr. Bacon.- As we have plenty of time, I would like to say a few words to encourage this society. You will remeber the World's Fair in New Orleans. Well there were there exhibits of the citrus family from California and Florida. California had an appropriation and Florida had nothing, but owing to the efforts of Mr. Anderson, who is now here, made a creditable exhibit. Of those obtained by Florida he secured medals for the best collection of 15,10 and 5 specimens of citrus fruits.

(EXHIBIT BB½)

Mr. W.H.H.Holdridge, Chairman.- I will endeavor to give you a little talk, so far as my own experience goes. I know but very little really, outside of the section I live in, in regard to the raising of pears, which would be interesting to this society. I live in the central part of the State, in the northern portion of the orange belt. I live in Alachua county; I came there nine years ago, and came for the express purpose of raising fruit. I had spent lots of money in Illinois in trying to raise pears. Eight years ago I sent and got several hundred Le Conte pear trees. I had heard that it was the only successful pear raised in Florida. I planted them in various parts of our town; those in the south part on black soil, and some of it rocky, proved worthless, most of the trees drying from, and all affected with, blight; but, in the northern part of the town, on lighter soil, the trees are still standing and in good health, and reasonably productive. I also planted some Keiffer pear trees, eight years ago, procured from New Jersey; they were on seedling pear roots; they have blighted on same soil where Le Conte is healthy. I have Le Conte trees and Keiffer trees that were planted four years ago; both kinds are large enough to hold from three to four bushels of pears, and both bore some last year. One Keiffer tree, planted four years ago; both kinds are large enough to hold from three to four bushels of pears, and both bore some last year. One Keiffer tree, planted eight years ago, bore fourteen bushels of pears last year, and others from three to five bushels each. Pear trees in my vicinity, to the south of me, have mostly proved to be of no account. Some large trees to the west of me, that have borne well, are now dying. Care and experience I find to be the criterion of success in pear-raising in the Northern part of the State, and will leave that fro some one else to talk about. In regard to markets, I have had no experience in shipping to the North; I have sold at home, and also shipped some South, and received satisfactory prices, from $1 to $2 per bushel net. Last year, a severe wind from the north, with light frost, the last of February, blighted the Le Conte pears when in full bloom, leaving but little fruit to mature while the Keiffer pears, also in bloom, were uninjured, and bore a heavy crop. This year, the frost of March 20 found the Le Conte trees in bloom, and has left at least a half-crop, now hanging on the trees; while the Keiffer pear trees had not opened a bud, afterwards bloomed full, but set but very little fruit.

Mr. Mann.- I would like to know the difference between the sand pear and the La Conte. I thought they were the same until recently.

Mr. Harvey.- The La Conte is entirely distinct from the sand pear.

Mr. Holdridge.- Mr. Harvey is a man from the northern part of the State. Would like to hear from him.

Mr. Harvey.- I have forty-eight acres of pear trees. The trees which I have are nearly all seven years old. I have got trees from one year old to that age. I am very much pleased with the La Conte pear. I am now puting in the Keiffer and quite a number of other varieties. I think that the La Conte is superior to the Keiffer as a market pear, because it comes in a better season. I do not consider the Keiffer good as a market pear. I think it is a good tree to cultivate and grow. I have quite a number of these trees planted, butI do not feel as much interest in them as in the La Conte. I have tried the Duchess, the Bartlett and some others, but I think, after all my experiments, that the La Conte pear is the best of all. I have gotten as high as $3.40. In regard to the Keiffer, I would say, put them on to the La Conte, and put them about eighteen inches from the ground. I have often grafted them. In no other way will the Keiffer do so well as when grafted on to the La Conte. I set out twelve other varieties of pear trees four years ago. Some of them are living yet. I did not set them out for market purposes. The Bartlett, Duchess, and some others are blooming.

Mr. Taber.- In relation to pears, I will say that I consider the Keiffer to be fully as good as the La Conte. I have to remove a large portion of the fruit from my Keifer trees so as to let them keep up. In all the experience which I have had, I would say that the Keiffer is by far the more preferable of the two. When I set out Keiffer pears, I do not want one to bear before three years. At the same time, I would like to have it bear when I get ready for it.

Mr. Holdridge.- Will you wait until the Keiffer is fully ripe before shipping?

Mr. Taber.- I would not wait for it to get well ripened.

Mr. Hooks. At four years old I gathered one bushel from a Dewys, and at five years old I gathered five bushels.

Mr. Bacon.- I would like for Mr. Hooks to tell us about the prises which his fruit took at New Orleans.

Mr. Rooks.- In Lake county (Sumter county it was then) we were awarded thirty-two prizes, and out of that I got twenty-two medals and diplomas.

President.- The next committee is the one on ornamentals. Mr. Theodore L. Mead, Chairman.

REPORT OF THE COMMITTEE ON ORNAMENTAL PLANTS.

(Exhibit CC.)

Your committee has not been able to learn of any striking novelties introduced since our last meeting, but will offer a short summary of the plants which seem best adapted to certain parts of the State.

Beginning with the rose, the acknowledged queen of flowers, we note their ease of cultivation in the clay soils of Middle Florida, and the difficulty we find in growing them satisfactorily in our sandy land.

The best bed of roses we have seen in South Florida were in the grounds of the Tampa Bay Hotel, where the soils was specially prepared by bringing carloads of clay from Pemberton Ferry, and mixing with this a large proportion of swamp muck. The growth of these rose bushes was strong and sturdy, and their bloom most abundant and satisfactory all winter.

On sandy land, especially if high and dry, success is much more certain if the roses are budded in stronger growing stocks; and the Cherokee rose is especially recommended for this purpose. A native rose found growing wild along the Ocklawaha river has been used to some extent, but is exceedingly troublesome from its suckering habit. The Banksia roses have also been used as stocks with excellent results; they seem perfectly adapted to our sandy land, and grow with a vigor almost or quite equal to that of the Cherokee.

Wherever our native white azalea is found growing wild, there is every reason to think that the cultivated azaleas will succeed. Azalea Indica, the species most commonly known in greenhouses, would need a sheltered place, though it is nearly as hardy as the orange; but the so-called Ghent azaleas are entirely hardy, and for weeks in Spring are covered with great blossoms that almost hide the plants. They have a great range of color from white through purple and yellow to deep crimson and scarlet, and are fragrant and easily grown if the soil and moisture is suitable. Lime in any form is fatal to them, so they are worthless in shell hammock soil. My best plants are growing in a drained muck bed fully exposed to the sun.

While the common double pink oleander is perhaps the best of all the oleanders, there are many improved varieties that ought to be more widely cultivated. The colors range from deep purple crimson to the palest blue. Some of the light pink single varieties have very large flowers of the most exquisite shades, and there are several shades of yellow and salmon which contrast well with the others.

When several varieties are planted close together so that the branches intermingle, we have the effect of an immense bouquet. Nothing can surpass the oleander as an ornamental hedge plant, and there is no reason why Florida should not be as celebrated as Bermuda for oleander hedge.

In ornamental planting we cannot dispense with palms, and we have a large choice among the allies of the date and the hardy relatives of the cocoanut, native of temperate South America. The best of the tall growing dates are undoubtedly Phoenix Sylvestris (the wild date of India), and P. Canariensis, or Canary Island date. Both are hardy, and grow at least twice as fast as the common date, while the Canary Island species ultimately attains high dimensions, specimens being known with trunk four feet in diameter, and a spread of thirty feet.

Several of the lower growing species may be used as hedge plants; they sucker freely from the base, and the spiry leaf stalks will become so interlaced and interlocked as to defy the passage of any creature larger than a mouse or less strong than an elephant. A Florida razor back, to whom the finest barb fence merely affords a pleasant back scratcher, will give a wide scope to a well grown dwarf date hedge.

There are two types of cocos available in the latitude of Orange and Volusia counties. One, which we may call the cocos plumosa section, have tall plumy heads, reminding me of the royal palm, and naked, ringed trucks, the leaf stalks dropping off when old, as they do in the ture cocoanut.

These palms will need a naturally protected situation if grown much north of latitude 29, but are admirable for town and city door-yards and such places where frost is less severe than in the open country. The largest tree of this sort known to me is in the Belair grove at Sanford. It endured the freeze of 1886, only losing its leaves, and is now about 25 feet high.

The other group of cocos is also represented by large specimens at Belair. It retains its bootjack, like the palmetto, and its leaves are gracefully arched and tapered, but stiffer and more formal than those of the other section. They are as hardy as the cabbage palmetto, and afford a pleasing variety in size and color, some not attaining greater size than the saw palmetto, and furnishing a fragrant, pulpy, plum-like fruit, while others tower up into lofty trees. The color varies in different species, from deep green to as silvery a tink as is seen in the East coast variety of the saw palmetto, so well represented about Ormond.

In the extreme South, where the cocoanut flourishes, much more might be done with palms than has yet been attempted. The red Lantanias, together with areca lutescens, with its clusters of golden yellow trunks and feathery plumes, would contrast magnificently with the intense green of the South Pacific curly paln and other kentias. The species mentioned are all comparatively hardy, and grow in this county if accorded some artificial protection during the coldest winter nights.

Orchids will well repay any one who will take the trouble to water them at proper times and protect them from actual frost in winter. Most orchids rest during the winter and should be kept almost, but not quite dry, even though in full bloom. With the oncoming of Spring the new fleshly roots appear, and then they must have water, and plenty of it, at least once a day, and they are all the better for it if watered twice.

The best possible material for potting is the roots of our wild ferns, especially the Osmundas or Cinnamon ferns, common in our moister hammocks and around muck beds. A large fern of this kind will often have a mass of roots around its base nearly as large as a bushel baket. Cut off these black fibres, shake out the earth and sand from them and you have just the material in which orchid roots will revel. Baskets made log-cabin style, of cypress, are perhaps the best containers for orchid plants, but they will do equally well in pots, if you will take a wire-nail and tack-hammer, and chip a hole, say one and a half inches in diameter, in the side of the pot near the bottom, for ventilation and drainage. If carefully done, scarcely any pots will be broken in the chipping process, and the pot should then receive its fern fibre, the orchid should be tied or wired firmly in place, using copper wire, as iron rust is dangerous. and then the pot may be hung in a wire

sling, and either dipped in a bucket of water or copiously showered every day. During the Summer, or at lease during the summer rains, they will do admirably, hung outdoors, under a shady tree or grape arbor, but during dry weather and frosty nights they will claim more attention.

Dendrobium nobile, one of the finest and most free flowering of orchids, is almost hardy, and, with some watering in the Spring, will take care of itself if established among the bootjacks of a live palmetto. The plant should be packed in these natural hollows with plenty of fern fibre and sphagnum moss. Some upon a tree in my dooryard have endured a cold of 21 degree uninjured, and bloomed early this Spring, after the flower buds had been subjected to 25 degrees.

One can hardly go amiss in trying any of the cattleyas; their flowers are often six to eight inches across, and of exquisite delicacy as well as brilliancy of coloring. The Laelias are very similar; Laelia purpurata is one of the finest orchids, and may be naturalized in this latitude out of doors. Many Oncidiums and Epidendrums will also reward the cultivator, but Odontoglossums, as a rule, will be a disappointment. Most of them are from high mountain elevations, and cannot endure our summer heats.

Among bulbs, there is a very large variety of choice crinums (generally known as "lilies" in our gardens), which have as yet been scarcely introduced. The St. John's lily and Jamaica lily, so called, are familiar examples of crinums--the crinums all agree in growing as large as a rosette of leaves from a bulb; from the axils of the lower leaves come the stalks, bearing great heads of amaryllis-like fragrant flowers.

Your chairman has made a special study of the secrinums, and has collected over seventy species, and varieties from all parts of the world. Some new hybrids that have just bloomed for the first time seem to be an improvement upon either parent, especially in the case of a cross between the crinum "St. John's lily," Crinum pedunculatum, with its immense bulb and spidery white flowers, and the dwarf, but hardy and large-flowered C capense.

Crinums are easily hybridized, and I recommend those among you who have the necessary patience to wait three years for the flowers from the seed to try hybridizing in their own gardnes.

All of which is respectfully submitted.

Theodore L. Mead, Chairman of Com.

President.- Is the committee on final resolutions ready?
Mr. Taber.- We beg to submit the following report:

REPORT OF A COMMITTEE ON FINAL RESOLUTIONS.
(Exhibit DD.)

Mr. President.-

Your committee on final resolutions beg to submit the following report:

Whereas, The Florida State Horticultural Society is now about closing the session of 1892 and

Whereas, this session has been much the largest and most interesting held since its organization, therefore be it resolved,

That we most heartily extend our thanks to the people of Ormond for courtesies extended, which have far exceeded what could have been expected, and we most heatily extend our thanks to the proprietors of the hotels Ormond, Coquina and Grenada for the delightful manner in which they have entertained this association, and we particularly wish to state our grateful appreiciation of the personal efforts of Mr. Anderson and Mr. Price in making this meeting the success it has been, and heartily tender our thanks to them for their kind hospitality in tendering the use of this beautiful hall and their hotel, and we extned our thanks to Mr. Ackerly, Mr. McCoy and Mr. Ketchell, and the lines of transportation they represent, as well as other lines of transportation, for the many courtesies they have extended to this society, and we wish expresely to thank the ladies for the beautiful decorations which have added so much to the at tractiveness of this session, and last, but not least, we thank our genial and ubiquitous brother (from No.9½, Mr. Bacon, who has been untiring in this efforts to make each individual member as comfortable as man can be.

G. L. Taber,
Edward Winter,
S. A. Cunningham.

Mr. Wright.- I move that the report be adopted.
Motion carried.
Mr. Mead.- I would suggest that for the next meeting we all have on a little badge, our name, for instance, "Mead of Oviedo," so that we will not be apt to make any embarrassing mistakes, as I know several gentleman did this year.
Mr. Mann, I move that we adjourn sine die.

(EXHIBIT ME)

Mr. Bacon.-Mr. President, before that motion is put I ask permission to announce to the members of this society that though it has been our desire to give you all a play-spell and show you more of our coast country while with us, the short limit of your round trip tickets and the almost continuous work of our sessions has made it out of the question until now. I am now happy to say that Messrs. Ackerly, McCoy, Ketchell, and others have generously given a day's extension on your tickets over their lines, and there will be three steamers at the bridge wharf at 8 o'clock in the morning, ready to take you on an all-day free excursion up the Hacolifax River and Buloes creek to the famous Mound Grove, landing on the way back at my place No. 9. There will be room and lunches provided for all, by our citizens, and we want you all to go.

Meeting then adjourned sine die.

DUDLEY W. ADAMS, President.
W. S. HART, Secretary.

In conclusion, the secretary would say, the invitation of the good people of Ormond was accepted, and taken advantage of by a large portion of the members, and these being joined by citizens made a large party for the excursion that filled all three steamers to their full capacity. The day, May 6th, being a most propitious one, the line of travel and points visited full of charming interest to all, there was no alternative but to enjoy the trip, and joviality and good feeling ruled the day. At Mound Grove a bountiful dinner was spread and disposed of, after which the party scattered to the different points of interest. Picking and preparing oranges for market was still going vigorously forward and the delicious King orange, of which there are several acres in this gorve, were rapidly being sent to northern markets, where they are now bringing as high as $12 per box to their fortunate growers. Although all were prepared to find an attractive place, when landing at Mr. Bacon's "No.9" on the way home, there is little doubt but that all who had not seen it were very agreeably surprixed at its beauty of arrangement, its wealth of fruit and flowers, its noble avenue of live-oak, orange and palmetto, and its happy location near by both river and ocean, yet perfectly sheltered from harsh winds, making it one of the most ideal homes of this fair state.

The trip down the beautiful Halifax river, its rippling waters spreading nearly a mile in widty, and its shores embowered in the varied growth from trop/palm to towering pine, was a most happy conclusion of the largest, most enthusiastic and most instructive meeting that the Florida State Horticultural Society has ever held.

This being the first published report, in book form, of any meeting of this society, the fine portrait of President Adams, who has served as the presiding officer from the organization of the society, to serve as a frontispiece to this volume, seems particularly appropriate, he having furnished it at the earnest solicitation of many members of this society.

To the Florida Agriculturist and the Dispatch Farmer and Fruit Grower, the editors of this report are indebted for much assistance, by putting many of the committee reports in print and furnishing copies of the same.

W. S. HART, Secretary.

## NOTICE OF INCORPORATION.

In accordance with the published (or posted ) notice, we, the undersigned members of the Florida State Horticultural Society, have met at the place and date specified, for the purpose of incorporating said society according to the laws of Florida.

Dudley W. Adams having been elected as chairman and W.S. Hart having been elected secretary, it is unanimously agreed that the name and style of the corporation shall be the Florida Horticultural Society, and that the business of the corporation shall be conducted by the corporation at its regular or special meetings and at intervals between meetings by the following officers, viz.: a president, three vice-presidents, a secretary, corresponding secretary, and treasurer; which offices may be held by one and the same person; and an executive committee consisting of three members of the corporation.

That the corporate existence of the society shall begin from the filing of these proceedings in the office of the clerk of the circuit court of Orange county, and shall continue for a term of ninety-nine years.

That the corporation shall incur no indebtedness. That the respective officers shall hold their offices for one year or until their successors are elected. That the first annual meeting of the corporation shall be held on the second Tuesday in April, 1893, at Pensacola, and hereafter at such places within the State as the society may fix at the annual meetings.

That the constitution under which the society has been conducting its affairs, is now adopted as the constitution of the corporation, and the same are hereto attached--the usual right to alter, change or amend the same from time to time being reserved. The following persons are the duly elected officers of the corporation for the year beginning May 20, 1892: Dudley W. Adams, president; T. L. Mead, first vice-president; G. L. Taber, second vice-president; George H. Wright, third vice-president; W. S. Hart, secretary; E. O Painter, corresponding secretary; J. B. Anderson, treasurer; executive committee, Lyman Phelps, C.F.A.Bielby, A. H. Manville; ex officio members of the executive committee President and secretary of the society.

In witness whereof the members of the corporation now present hereto subscribe our names:-

Dudley W. Adams,
Lyman Phelps,
W. S. Hart,
E. O. Painter,
A. C. Martin,
Frederic H. Rand,
S. H. Gaitskill,
A. M. Thrasher.

CONSTITUTION.

ARTICLE I.- This organization shall be known as the Florida State Horticultural Society, and its object shall be the advancement of horticulture.

ARTICLE II.- Any person may become a member of the society by signing the consitution and paying $1.

ARTICLE III.- Its officers shall consist of a president, three vice-presidents, secretary, corresponding secretary, treasurer, and executive committee of three, who shall be elected by ballot at each annual meeting. After the first election their term of office, shall begin on the 20th day of May following their election.

ARTICLE IV.- The regular annual meeting of this society shall be held on the second Tuesday in April, except when otherwise ordered by the executive committee.

ARTICLE V.- The duties of the president, vice-president, secretary and treasurer shall be such as usually devolve on thos officers. The president and secretary shall be ex officio members of the executive committee.

ARTICLE VI.- The executive committee shall have authority to act for the society between annual meetings.

ARTICLE VII.- The constitution may be amended by a vote of two-thirds of the members present.

SANFORD, Fla., May 20th, 1892.

According to notice hereto attached a meeting of the Florida State Horticultural Society was held in the office of the First National Bank, on this the 20th day of May, 1892, at 10 o'clock A.M., with eight members present, as follows:

Dudley W. Adams, W. S. Hart, E. O. Painter, F. H. Rand, Rev. Lyman Phelps, A. M. Thrasher, A. C. Martin, S. H. Gaitskill.

The meeting having been called to order, Mr. Dudley Adams was elected chairman, and W. S. Hart, Secretary.

The object of the meeting was then stated by the chairman to be the incorporation of the Florida State Horticultural Society.

Mr. Phelps then read the form of incorporation presented at the meeting at Ormond, and after amendment it was adopted.

On motion of Mr. Phelps the meeting then proceeded to the election of officers, which resulted in the election of the following by ballot:- Dudley W. Adams, president, Theo. L. Mead, first vice-president, C. L. Taber, second vice-president, Geo. H. Wright, third vice-president, W. S. Hart, secretary, E. O. Painter, corresponding secretary, J. B. Anderson, treasurer, Lyman Phelps, C. F. A. Bielby, A. H. Manville, executive committee. D. W. Adams, W. S. Hart, ex officio members executive committee.

On motion, the meeting then adjourned.

W. S. HART, Secretary.

"Notice is here given that there will be a meeting held at Sanford, Orange County, Florida, on May the 20th, 1892, at 10 A.M., at the Town Hall, for the purpose of incorporating the Association known as The Florida State Horticultural Society in accordance with the laws of Florida. The general objects of the proposed organization are the promotion of Horticulture, and the Horticultural interests of the State of Florida in all its details.

Dudley W. Adams,
Lyman Phelps,
E. S. Hubbard,
W. S. Hart."

STATE OF FLORIDA)
State of Florida) ss.

I, T. J. Appleyard, publisher of the Gate City Chronicle, a weekly newspaper printed and published at Sanford, county and state aforesaid, do solemnly swear that an advertisement, a true copy of which is hereunto affixed was published in said Gate City Chronicle, on the 13th day of May, A. D. 1892.

T. J. APPLEYARD.

Subscribed and sworn to before me this 20th day of May, A. D. 1892.

E. B. DURLEN,
Notary Public.

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Sanford, Fla., May 20th, 1892.

This is to certify that the foregoing is a true copy of the minutes of the meeting of the Florida State Horticultural Society, held in the directors room of the First National Bank of Sanford, upon the date above written.

DUDLEY W. ADAMS, Pres.
W. S. HART, Sec.

Subscribed and sworn to before me this 20th day of May, 1892.

E. B. DURLEN,
Notary Public.

* * *

EXTRACTS FROM VARIOUS REPORTS.

(An extract from the report of citrus committee, prepared by E. S. Hubbard and read at De Land, April 30, 1890.)

It is now known that the whole citrus family is prone to change from difference in soil and climate, as well as from its natural tendency to "sport" when cultivated from seeds, after the manner of most of our orchard fruits. It is also said that in many parts of the West Indies and South America the whole tribe is found growing wild, springing up spontaneously from the seeds of the trees originally planted by the Spaniards, varying in size, form, and in every gradation, from the lime to the shaddock. Oranges are found there equal in flavor and sweetness to those of the Azores, though of much larger size, while others, in the same grove, vary from these to a degree of sourness and a crid bitterness as sufficient to draw blood from the mouth, accompanied by severe pain. There you may see the lemon, lime, shaddock, and sour, sweet and bitter oranges growing indiscriminately together in the same forest.

They are round, flattened, rough, smooth, ovate, pear-shaped, thick and thin-skinned, juicy, dry, some with and others without seeds, some bearing seeds at the end, outside of the fruit, while others present a navel-like protuberance at the same point with no seeds, and in passing through these groves it will be observed that some trees will contain but little fruit, while others will be loaded to excess.- Essay on Profitable Citrus Culture by H. F. Rudisill, American Horticultural Society, 1888.

The above extracts outline the scope of the scientific naturalist investigation, and the breadth of the field as applied to citrus fruits. I will hereexpress regret that the treatise of Gallesio on the citrus is out of print, and inaccessible to the public.

It contains the results of years of patient experiment and investigation, by which were established the divisions and classification of the species then accessible. The work should be in the hands of every orange grower who takes more than a mercenary interest in his calling, and is of more practical value in promoting exact knowledge than all the other works we have on the subject. It is not edifying to see from time to time in print, crude remarks on navels and their origin, strangely marked hybrids and varieties or occasional individual monsters.

There are well defined laws of pollen fertilization by which these are formed, and I will briefly comment on the facts discovered by Gallesio, our present knowledge, and the possibilities of the future.

Although his work was done nearly a century ago, before the day of Darwin's theories, yet he recognized in the citrus family the diversity of species which have become fixed from the primal types, and comments on their evolution. He divides the citrus of Europe into two sections, the sour or Bigrade orange, and the citron. He was unacquainted with the shattuck and citrus nobilis, which he describes from the observation of others. There came true to seed in his day which, for that reason, he classified as species the sour orange, sweet orange, lemon and citron. We now have the lime, bitter-sweet and blood oranges, and perhaps others that come fairly true to seed.

He established the law of direct pollen fertilization as the source of all hybrids and varieties which could c only come from seed, and scouted the idea of bud variation then held by cultivators, which Mr. Phelps has established as being due to the direct influence of pollen on adjacent twig buds, which can be propagated if budded soon after blooming.

To propagate varieties with certainty true to type, bu budding wood must be taken before the bloom comes out. Gallesio searched exhaustively to discover when the sweet orange was introduced into Europe, but could find no date, and convinced himself it must have been brought gradually by way of Arabia and Egypt. I am, however, of the opinion it originated separately in the different places where the sour orange and citron were grown together in Europe as well as China, as no hybrids were known of the citron till the sour orange was introduced by the crusaders.

The characteristics of the different strains of oranges are too diverse to have sprung from the same source. Fortuitous hybrids of excellence, are few and far between as the tendency of their seedlings is backward toward the primary types.

All species of citrus were, till the latter part of the eighteenth century, propagated entirely by layers and grafts, as the tradition and experience had been that seedlings, especially of the sweet orange, would revert toward the sour or bitter orange. The type, however, had then by long cultivation become fixed, and the same is becoming true of the bloods and navels. The exceeding diversity and gradation of effect on and of the points that go to make up the physical and juice characteristics, has produced innumerable hybrids and varieties, and our horticultural progress demands that similar and inferior varieties should be simplified as to names or discarded, and the strains that form the best types described systematically, as with the apple, grape and peach.

It is the labor of a generation to fix and develop oranges like the Washington navel and tardiff, and from analyzing the parentage of such we can gain data to aid in the work of making artificially new varieties.

We can surpass in merit the present varieties, but at the same time it must be remembered that a term of years is necessary to establish by successive propagation a new variety so it can be depended on to produce with certainty its type.

Federal Point, Fla., E. S. HUBBARD.
April 28, 1890.

## FIG CULTURE IN FLORIDA.

(Read before the State Horticultural Society, at DeLand.)

Varieties.- In reply to letters addressed to various parties, asking as to the adaptability of varieties, we received amongst other replies, the following from Hon. Harrison Reed, of South Jacksonville:

"I should take pleasure in adding to the interest of your report on fig culture, but all I know is derived from practical experience of twenty-five years in one locality. In '67 I purchased a home here, and found several fig trees in a neglected condition. One large tree, of the yellow or light green variety (variously designated as the lemon,

white, Smyrna, etc., common to Florida), standing where it received the slops from the kitchen, has expanded and borne continuous crops of ten to fifteen bushels. I has increased in size of fruit from its condition as found, and is of uniform shape and size, flattened at the apex, flesh white or yellowish, and altogether resembles the dried fig of commerce.

"Other trees of a small, brown variety, called Celeste, brown Smyrna, etc., the earliest ripe, and best for table as gathered without preparation is oblong and smaller than the other. Other trees, found in a dilapidated condition, bear a large, purple fruit, answering to the Brunswick, which, with proper pruning and manuring, I have induced to double its primitive size, and continue to bear from June to December, its heaviest yield being in August. The fruit is pear-shaped, and frequently as large as a coffee cup; it is very prolific, and finds ready market for the table and for preserving. Another variety, in an obscure and wet portion, was found to be the brown Turkey, a solid, compact fruit, with light brown skin, fine seed and sweet flesh; a better fruit for transportation than any other, but not so prolific.

"These four constitute my varieties; all bear annual crops, and in proportion as they are fed and protected against drought. It is the easiest raised and most certain of all our fruits, and should find a place on every farm and in every garden. It has no insect or fungous enemies that I have known, and my trees that are forty years old are as fresh and vigorous as the younger. I prune and cut away about 25 per cent. of the annual wood product."

"Your committee also wrote to Mr. D. Redmond of St. Nicholas, asking for his views as to the adaptability of varieties, to which he replies as follows: "On page 95 of Report of American Pomological Society for 1889, article, "The fig and the pomegrante, you will find all I can say in regard to the fig at present. Were I selecting varieties I would name: 1st, white Adriatic; 2nd, Brunswick; 3rd, Celeste; 4th, black Ischia; 5th, brown Turkey; 6th, white Genoa."

Your committee would here say that the report of D. Redmond, above alludéd to (page 95, American Pomological Society's Report for 1889), is a most valuable article on fig culture; and that the same volume also contains a valuable article on the same subject (page 93) from Ex-Governor Reed; and we would earnestly recommend a careful perusal of these two articles by all who are interested in the cultivation of the fig.

We would call the attention of the Society to the high rank given to the Brunswick, both by Mr. Redmond and Ex-Governor Reed. The Chairman of this committee has repeatedly had fine fruit of this variety mature in the nursery rows the same season that the cuttings were planted.

Owing to the varying conditions under which different varieties are often grown, even in contiguous localities, it requires additional careful experiments in order to fully determine the comparative value of all varieties to any given section. The white Adriatic has, however, succeeded admirably in many sections of the State, and the tree is an exceedingly strong grower. The Brunswick, above alluded to, is believed to be one of the best. The Celeste, or Celestial, is a very fine variety, one of the heaviest bearers that we have; and the fruit, though small, is the sweetest of any of the known varieties. The black Ischia, green Ischia, white Genoa and white Marseilles have all done well in the central and northern sections of the State; but as to their adaptability to extreme Southern Florida, we have not been able to obtain as definite information as we would with.

Transplanting.- In transplanting fig trees we would recommend severe amputation at both ends. The fig has an enormous amount of thickly matted, fibrous roots, and experience has taught us that the severe pruning of these fibrous roots before transplanting is an advantage. By cutting them off to within two inches of the main r ot, and then cutting off the top of the tree entire, and simply planting this pruned root, we will get a larger and more vigorous tree at the end of the first season than we would by leaving both root and top intact at the time of planting.

In recommending this system of pruning, please bear in mind that we are recommending this treatment for the fig only; and we would further say that while some may object, theoretically, to this practice, a

careful trial of the two methods of planting will convince them of the superiority of the method here recommended.

After-treatment.- There are very few fruit trees that will thrive with so little cultivation as the fig, and perhaps none that are so easily damaged by too deep plowing. One light plowing in the Spring is beneficial, as is also the keeping down with hoe or cultivator of a too rank growth of weeds and grass. But frequent deep plowing during the season is detrimental, as the fig is a great surface-feeder and will not submit kindly to its roots being disturbed.

The tree delights in a close, compact soil, which, while retentive of moisture, is not wet; and those conditions, if not always readily obtainable, can be perhaps more nearly approached by a liberal use of mulching than in any other way.

Curing and domestic use.- No fruit can be prepared in a greater variety of ways than the fig. It may be eaten fresh from the tree, dried, preserved, pickled, made into puddings, pies and paste, or used for jellies, jams, candies and cakes.

As far as we are aware, the curing of figs hasenot yet been attempted on any large scale in Florida. Whenever it is attempted it will undoubtedly be necessary to use evaporators, instead of relying upon sun-drying, as practiced in Smyrna, as a large portion of our Florida crop matures during the rainy season.

GEO. L. TABER,
E. S. HUBBARD, Committee
H. A. ROBIE.

## FIGS AND FIG DISEASES.

Following the committee's report, Mr. Bielby asked why men always report the fig free from diseases; His figs have been greatly troubled with a leaf-rust, a fungous disease. It begins in the old leaves at the bottom of the tree, and goes up through it, generally defoliating the tree. It often makes two attacks in the course of the season.

He developed the white Adriatic. Had a fine orchard of the, with a promise of at least fifty bushels of fruit. When the rainy season came on they all

burst open and soured; not four quarts of good fruit left. Did the same thing five years.He pulled them all up. The brown Turkey and some others are good enough, but he will fool away no more time with the White Adriatic.

Mr. Phelps, in fifteen years, has never seen a thoroughly healthy fig tree.

Mr. Mead, in nine years, has not had even four gills of good fruit.

Mr. Bacon set seventeen fig trees, cultivated them three years, then pulled them all up but one. He went at it, and girdled and slashed it, and it bears a plenty now. Had the same result with another, treated hte same way. The fig is subject to root-know, but he does not think it hurts it materially.

Mr. Robie says South Florida is too cold for the white Adriatic; the frost of March 17th killed all his to the ground.

Mr. Bielby thinks the white Genoa the least hardy against cold. The fruit is exceedingly fine, small but sweet; but the tree is dwarfish and tender.

Committee on kaki; no one present.

Committee on fertilizer; ditto. A letter was read from Prof. Whitner, of Lake City, regretting his inability to report, on account of duties at the college.

## REPORT ON STRAWBERRIES.

(Extracts from a paper prepared by Stephen Powers, of Lawtey, and read before the State Horticultural Society at De Land, April 30.)

And yet the quality is a secondary consideration for early Northern shipments. The outward appearance and a good shipping quality are of paramount importance.

Now, as to the two old varieties, the noonan and the hoffman, heretofore reported. This season has presented a series of conditions probably never before experienced by the growers of the State. The best growers have learned to depend largely on raw ground bone for its lasting qualities; but this year the drought set in in the Fall, before the bone was applied, and continued so long that it could not become rotted and feed the plants. In ordinary seasons,

four-fifths of the crop is shipped in the last week of March and in April, and a fertilizer is very desirable which will hold the plants up to the work for this late shipping. This year, however, berries began to go forward soon after January 1st, and the men who had used chiefly the quick-acting commercial brands were in the lead, and staid there. A good many had paid all their expenses as early as February 15th, and even before, while in most years the shipments do not cover the expenses before April 1st. But the growers who used bone are not discouraged, for such a season may not happen again in a decade.

The rust is an enemy which the intelligent grower has learned not to dread seriously any more. It is found that where plants are set in August, thus having time to make a large body, and the ground is well filled with a good lasting fertilizer which will hold them up through the winter, even if the rust seizes upon them they will grow out in the first impulse of Spring, and will fruit abundantly. But where plants receive all their supply of fertilizer close around them in holes or drills, especially if it is not of a durable kind, and are forced into a rapid, soft growth in the Fall, they are likely to be stricken with the rust soon after the mulching is applied, and having no reserve of fertilizer distributed at large through the ground to fall back upon, they will go to pieces and make a miserable failure. They may be galvanized into activity again with nitrate of soda, but it will be a sorry day for the grower when the applies this powerful stimulant so late in the season, for the berries, will ripen so soft that they cannot be shipped.

I would say that, with the possible exception of the cloud, no variety has yet been discovered wh ich will even partly displace the noonan as a good shipping variety. The hoffman certainly will never do it. Even with the cloud, we have to retain the noonan for every other row as a fertilizer. It behooves us, therefore, to use every exertion to keep this acclimated favorite up to a high standard, and falsify the old humbug of a saying about varieties "running out."

Irrigation was tried in a small way, by a few growers, and the results were highly satisfactory. One that I am acquainted with, got a little water by driving some ditches back on the hard-pan floor, and conducting the water down between his beds. This helped the plants very materially as the water was found to percolate laterally ten or fifteen feet, and rise quite to the tops of the bed. His berries were conspicuously large, and plump than those not irrigated. The commission men were eager to buy them at the depot; they offered him $ 10 a bushel, even $12 for one very choice one, while they were content to let the non-irrigated berries go on consignment. They brought 60 cents a quart in New York soon after the freeze, when others were only fetching 50, 45, or less.

It is found that in very dry weather mulching is a detriment to the plants; what little dew is in the atmosphere is strained out by the mulching and is evapporated by the sun in an hour or two, without having a chance to benefit the plants; mulching also diminishes the yield, especially if applied too early. But in seasons of ordinary rainfall, the spattering of sand on the fruit, when it is not mulched, causes a loss in price, which more than counterbalances the increase in yield. A man with a few rows in a garden can wash the berries, or shake them in a sieve or in netting, buy when they are grown for commercial purposes, this is hardly practicable. Lime and Canada ashes are a kind of "cheap John" fertilizers, which benefit the land to some extent in a mechanical way, but their chemical as well as their nutritive value is in considerable. Strawberries undoubtedly need potash in abundance, but this is best applied in the form of high-grade sulphate. The lime and ashes have a high per cent. of free alkali which renders them very caustic to the hands, and doubtless so to the land. At any rate, it has been found that a generous application of pure, raw ground bone and sulphate of potash, with cotton-seed meal or nitrate of soda to secure plant growth, will produce plenty of good fruit. These fertilizers are high prices, but they pay best in the outcome. The money expended for lime and ashes is not a very good investment in strawberry growing. Their cheapness is their principal recommendation, and to the grower who means business, this is no recommendation at all. STEPHEN POWERS.

## GRAPES FOR MARKET.

(Extracts from grape committee's report, read before the Horticultural Society at De Land, April 30th, prepared by H. Von Luttichau.)

I must say the largest number of these so-called successful grapes have been, more or less, a failure with me. A variety bringing a few good bunches here and there may be called successful by one grower, and considered worthless by his neighbor. A successful grape is not the one that grows only, but one which also pays - a grape, sufficiently prolific, which we can send to market and receive returns for our labor. A wide field is presented to the amateur, who will fidn a very attractive amusement in experimenting with different varieties of the grape. For the practical grower (for a paying vineyard), varieties to recommend are few. By naming American kinds- Ives, Delaware and Niagara- at present all is told. I am aware other varieties are also recommended, for example, some of Rogers' hybrids or Perkins. I do not wish to contradict such opinions, but my experience is, except perhaps Lindly, all of Rogers' grapes have the same fault, too many imperfect bunches, some few real good ones, but not enough to make them pay. Perkins, also often recommended, is a grape of a partly red, partly green bolor, berries dropping off, blessed with a repulsive odor andof no quality. I have tried to sell this grape for a few years; whereever I have sent them I have been requested to do so no more, and when a colored fruit peddler in Waldo declined with thanks, I grafted them to Chasselas, andnow these Perkins roots pay me well.

But now, what does constitute a truly successful grape for market, for homes, or whatever you want it for? I can answer this question no better than to read to you part of a reply received from a commission merchant of Philadelphia, to a circular I had sent to a large number of commission merchants, and of which, later.

Pancoast & Griffiths say: "Let us call your attention to a fact too often overlooked in the South, and that is, that no grape, no matter as to other qualities, will sell here in scraggly bunches and loose from the stem. The first market quality is in the size, compactness and tenacity of cluster, and you will never succeed in grapes for Northern marketing without you succeed in producing a good size, compact and tenacious cluster."

This seems to me to be most correct and to the point and whoever can grow such a grape, it matters little as to name, provided it is sufficiently prolific, will have a truly successful grape.

The following was sent a number of commission merchants in our principal cities:

"Please state average prices Florida grapes sold for last season, Niagara, Delaware and Ives; and is demand best for white, black or red grapes?"

I added the last question on account of a discussion going through our papers, last Summer, in regard to a preference of black to white grapes.

Reports received are in favor of white grapes.

Boston and Baltimore prefer white grapes; report but few received, selling from 12 to 30 cents; Philadelphia from 10 to 30 cents, and also in favor of white grapes. The reply from Pancoast and Griffiths of Philadelphia, is rather interesting, and I will give it to you in full After their remarks about market grapes, which I already have read to you, they say:

"Prices grapes usually sell for are as follows: Concord 3 to 4; Ives, 3 to 4, Niagara, 6 to 12; Delaware, 6 to 10; foreign varieties, 10 to 20 cents per pound. White command highest prices, red next, black next, other qualtities of cluster, flavor, etc. being equal. The above prices are the wholesale, ranging during the buying and shippedg time of the respective kinds."

I wrote to them, prices,given seemed not to apply to our early grapes, they themselves having sold my Chasselas for 40 cents a pound. I received the following reply, which I shall read to you, refraining from comments:

"Replying to your favor of the 24th; yes, the prices apply to the time when grapes are most plentiful here, and you must bear in mind then is the only time when large quantities of them are in demand, and that large quantities put here out of that season of natural demand for them here, in all probability will at best not command any more money. True, we have sold Florida grapes as high as 50 cents a pound, very early in the season for grapes, and consequently these fancy prices are paid more for the novelty than for the food of the grapes; and that with any considerable quantity it would be very different, especially with grapes, which, to be honest, we must tell you plainly

are not a very desirable market commodity, as a rule. Now, this may not at all agree with what you want to hear and report, but we are giving you the acutal case, otherwise would lead you astray.

PANCOAST & GRIFFITHS."

Replies from New York are more inviting, and some of them I will also give in full.

Edward L. Goodsell says:

"I would say that, generally, everything depends upon quality, and not upon variety. Anything really fancy, in any line of fruit, always sells at a very high price to the fancy trade in New York. E. L. GOODSELL."

Archdeacon & Co. of New York, who to my personal knowledge are doing a large business in all kinds of native and foreign grapes, write as follows:

"We will now answer the different questions you ask, as near right as in our power. Ives always rule low; we do not remember of their ever having paid the shipper. The same holds good about black varieties. When they arrive here (New York) they seem to have lost all lustre, and the appearance they present is not very attractive. Delaware grapes, last season, seemed to be most successful, as far as we could remember; they arrived here in fair order, and, being wanted, they sold well.

"The prices of grapes, no matter where they may come from, depend upon the quality, condition on arrival, and the demand in the market for that particular kind. Last season the price ruled from 25 to 50 cents, in good order. These remarks hold good about the Niagara grapes shipped to this market last season. The prices for them ranged the same as for Delaware, if in good order. As regards foreign grapes, if in good order and well grown, they command fancy prices.

ARCHDEACON & CO."

The value of foreign grapes is indisputable; wherever there is hope they may succeed, they should receive a trial.

Notably among the Chasselas are the very earliest grapes we have, and the most perfect market grapes in existence. Some succeed well with me, and the farther South they will be taken the better they will do. There are but few of our native roots which can really be called successful; we cannot in reason expect any better from the foreign grape. In conclusion I may say, a vineyard for profit in Florida should at present consist of 60 per cent. Niagara,

30 per cent. Delaware, and 10 per cent. Ives. Varieties of the foreign Chasselas should be tried, and planted or grafted according as they succeed.

H. VON LUTTICHAU

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## TRANSPORTATION.

(Committee report prepared by Mr. Geo. H.Wright)

Mr. President, and Members of the Horticultural Society:-

No community can succeed in these days of progress and enlightened civilization without the best means of advanced modes of transportation. This is equally true as to transportation. No company or combination of capital can meet with success without the aid of co-operation of the producers of the soil. We often hear of the oppression practised by the common carrier, excessive rates of freight and delays which make the shipping of fruits and vegetables so hazarduous and so uncertain. Railroads and steamship companies complain that they cannot make any money on the capital invested, and the producer and grower that he has no money left to support his family and pay his taxes. The question that arises is, are these evils to be corrected, and if so, how are they to be brought about? It has often been said that the transportation problems are so intricate and complex that men of ordinary caliber have no right to attempt a solution, and I assure you that I would not undertake the task had I not been ordered to do so by your worthy president. Assured that there are wrongs to be righted, there comes the all-important question: How may this be accomplished.

I would first suggest a State Railroad Commission, with absolute power to make maximum rates, and power to enforce the same, and if the courts should overrule such acts of the commissioners, let the people nominate and elect court judges that will go on the principle that the government is made for the people, and not the people for the government. Create a general Government Commission, who shall have absolute power to make and enforce Inter-State rates, from which there shall be no appeal. Third, the Nationalization of railroads and use the same at absolute cost in the interest of the people and for the people.

You may smile at this last proposition! Yet why is it not as practicable as in other countries not so far advanced in civilization? In India, the government owns and operated the railroads, and at greatly reduced rates over this enlightened country of ours. There the laborer can ride on railroads at the rate of 1-17 of a cent per mile, and while the common laborer gets only 7 cents per day, yet he can ride more miles for said amount than the laborers in this country at the advanced wages of $ 1 and $1.50 per day. In Australia, all the main lines of railroad are owned and operated by the government, and no better service is had in any country. The laborer of the cities can buy for the sum of $ 17.50 an annual ticket that will entitle the holder to travel a road of sixty miles, every day in the year. If these low rates can be maintained in the countries mentioned, by the nation owning the roads, why may they not here? It seems to me these are thoughts well worthy of our attention.

It takes time to bring about these great reformations and the dear people must be educated up to think and act for themselves and not allow a lot of politicians to act and think for them. And until these things can be done- allow me to make one more suggestion- let us, as fruit and vegetable growers, do a little transportation for ourselves.

Let us, as a company, raise $100,000, build three iron steamships of 1,000 tons carrying capacity each, fit them for carrying our products to market, by well ventilating and heating pipes, place them on the line between Jacksonville and New York, and carry oranges and lemons at 25 cents per box and vegetables at same rates; and have our ships pay us a profit of 20 per cent. on the investment. This ispracticable, and can be done; such ships can be run at a cost of about $200 per day, and will carry 10,000 boxes of oranges and leave storage room for 400 tons of miscellaneous freight. Are there 99 men who will unite with me in putting up $1,000 each and try the experiment?

This would solve the problem of cheap freight rates.

C. A. BACON, )
H.W.WOODWORTH, ) Committee
H.J. COX )

(The following is selected from the discussion on Transportation at the De Land meeting in 1890)

Mr. Hill, of Committee on Transportation said: Mr. President, the Committee on Transportation has had no meeting and have no report to make. I think we should get together as a whole and state our grievances and try and get redress. I do not know as any general report will cover the ground. If your Society cares to know anything about our own local business with regard to our strawberry shipping, I have some statistics on this subject. The strawberry interest in the counties of Alachua and Bradford have become very important. I suppose I do not over-estimate it when I say that in those counties there is at least one thousand acres cultivated. These strawberries are carried for the most part over the F.C.& P. System. After the first few weeks of shipment the freight is carried in refrigerator cars as we think it necessary. We pay a freight rate to New York of $5.02 per hundred pounds. This rate is almost prohibitory. It might be profitable for the first month's shipments, as berries grown in January and February command high prices; but as soon as the product gets sufficient to ship in car-load lots they won't stand the freight tariff. I was told by a commission man in Chicago that seventeen quarts supplied his market at $2.00 per quart. As soon as they become more plentiful the price gets less. There seems to be no disposition on the part of the transportation companies to give us any returns. We have petitioned and remonstrated without effect. The Louisiana growers, who are competitors of ours, and whose products come in a few weeks later than ours, are favored by a through transportation line from New Orleans to Chicago, and they get a rate of $1.05 from New Orleans to Chicago. I am speaking of freight rate. The Mobile growers get a rate of $1. This in refrigerator cars, but the shippers pay for the ice. The total cost of these points amounts to about two cents per quart. It costs us ten cents, so that when these localities commence shipping, it becomes unprofitable for us to continue. We paid this year on one car-load of berries to New York $1,040 freight. The freight charges alone were $815.75 from our station to New York. The same service from other points I think costs them $ 165.

I presume like all other communities we will have to work that problem out for ourselves. If the interests become unprofitable, we will have to quit it, and that will certainly be the case if we cannot get lower transportation. There seems to be a disposition with the railroads between Florida and New York to favor their own localities. They certainly legislate against Florida, so far as supplying the market with perishable goods is concerned.

We can ship one box of strawberries to New York by express for $1.90 and we pay by freight, including the refrigerator service, $ 3.20. We are obligated to ship on ice and so we ship by freight. The freight lines also require a minimum of 100 crates to the car. They will charge just the same for 25 crates as they would if there was 100 crates, but if there is one more than 100 you pay for it extra, The largest shipment this year was 351 crates to a car. We had to pay $ 2.50 freight per crate on them. The rates are not satisfactory.

Mr. Bielby.- Is Mr. Hill able to inform us who it is that makes these exhorbitant charges?

Mr. Hill.- We don't consider our railroad is charging too much for the services they render. They have all the handling of the fruit and it is the initial service that makes the exhorbitant charges. I think this road is doing all they can. They charge 50 cents per crate. The S. F. & W. which is the next road charge us 25 or 27 cents. The C. & S. charges us 29 cents or thereabout. The Atlantic Coast Line which carries from Charleston to Richmond charge us $1.20, and the Pennsylvania road about 27 cents. The one that charges $ 1.20 is the one that we complain of. We have not been able to make the railroad companies believe that the strawberry culture is not a very profitable and they want the biggest part of it, and they get it. These are the first returns that we had. I shipped a car-load to Chicago of 250 to 275 crates. I have here the returns of fifteen crates which sold in the market for $ 59.50. The freight charges on the consignment was $ 48, the commissions $ 5.95, leaving net proceeds of $ 5.55, or a net return of less than the commission man's charge. This left for the grower a little over one

cent per box, net, after paying for the boxing, picking, etc. The reason that the fruit brought so low a price was that it was brough directly into competitionwith the Louisiana fruit. I think our New York consignments have been worse than this. I think perhaps too much has been said about the net profits that have been made on the strawberry culture. I think the railroads have been thinking that a man only had to have a few acres of strawberries to get rich, and they want it all. I have some statistics from California showing what freight the Californians pay on their shipments to New York, and I find that we pay more from Florida than they do. They have an organization in California known as the Shippers' Union, and they ship in train lots. Seven cars constitute a train, and this train takes the preference over any other train on the roads. They are loaded by the shippers and placed ahead of the express trains which are not allowed to pass them. For that service they pay $ 440 per car-load, and the time is seven days. We pay $ 815 for the same service. They will carry any kind of perishable fruits, plums, peaches and anything that can be shipped in car-load lots to New York in refrigerator cars with the same service that we have for strawberries for $ 475 per car. For that same service we pay $ 1,040. It is simply an outrage and I am glad to bring it before the Society so that it can be published and become more and generally known. The redress is a question for us to figure out. The rate is prohibitory, and the time for Jacksonville with this service is four days. A car shipped from Jacksonville on Tuesday will arrive in New York on Friday; that is inferior to the service of the Californians. The strawberry business requires a special service and we expect to pay more for it than for any other, as the fruit is more perishable and requires nicer handling. We do the handling but the transportation companies charge us for it all the same. We ship at our station as high as eight hundred bushes, or four car-loads per day. There has never been a sufficient quantity of berries to warrant asking for a special train. The probability is that there are rarely over three car-loads going over one line at a time. Our practice has been to ship one car-load to Philadelphia, oneto Chicago and one to New York at the same time. It would be ruinous to send a train of berries to one point. The transportation

companies require us to ship a car-load to one point, and won't let us stop anywhere and take a part of them out. We have not as yet been able to get car-load rates to Boston; our shipments to there have been by steamer, but later on we have to ship in refrigerators. The strawberry season is too early for vegetables, and our shipping season is generally over before the vegetable season begins. Our season is generally over by the first of May, but if we had a low rate of ffeight we might, in ordinary seasons ship until the middle of May, as it is, we stop shipment of berries with the bulk of the crop in the field.

There are no vegetables going into market from this State at strawberry time except, perhaps, cabbages; tomatoes, cucumbers, string beans and that class of vegetables come in later. I know the transportation companies carry vegetables for much less than they do berries; they carry a certain grade of vegetables at the rate of sixty and seventy cents per hundred, the same bulk that we pay $3.20 on strawberries. The refrigerator lines tell us that they get for their shipments from Louisiana $2.50 for their service, and the freight included, while we pay $6.04 per hundred. They get for 100 pounds three crates of 24 quarts each, while we get only 64 quarts. From Texas they carry berries to different points for from 52 to 60 per 100. We pay $5.02. I do not think this matter has been brought before the Inter-state Commerce Commission.

I think that the Farmers' Alliance or Exchange has been trying to work up a lower rate of freight. We get planty of promises but no favorable results. Last year we were assured by the different traffic lines that there would undoubtedly be lower rates for this season, but we were unable to get any rates or to know anything about what our rate was to be until we began shipping in car-load lots, then they said the rate given was the best they could do; then we had th berries to ship/they knew it. It depends a great deal upon the refrigerators how long the berries will keep in the cars. I have seen them that would keep two weeks. We expected to get good rates over the new raod that came into Palatka, but it came too late to do us any good this season. If we could only get perfect service by the steamship lines we might do better.

Mr. Phelps.- Is not the great difficulty that the initial lines cannot makee satisfactory arrangements with the other lines?

Mr. Hill. - That is what is the matter. I really believe that the Manager of transportation of our road has done all he could to get a satisfactory rate with other lines, and he assures me that he will continue his efforts, but he has but little to say about it, as our road only hauls the product forty miles, and gives all the service it can; they will even send a special engine to our station to take a car-load of berries to the other end. Notwithstanding this we find fault, and feel justified in doing so.

Mr. Phelps.- I think things are going to be better from year to year. The moment that we get one line of transportation through from here to Chicago we will save a great deal of time and expense. The roads have to be paid and the officers have to be paid. There are six sets of officers between here and Chicago. From Mobile they have a through line, and consequently but one set of officers to be paid. I think we are in a progressive age, and that we are one year nearer the time than we were a year ago when we will raise these things and make them profitable.

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(Selection from paper of E. O. Painter, of committee on vegetables read at Orlando, 1889)

Our experience in raising vegetables in Florida has been confined to high pine land and mostly for home use. Whatever our experience has been we do not put it down as a rule for the whole State, nor do we wish anyone to accept them as a criterion to go by, unless they are similarly located and their own judgment leads them to believe that we aim at the truth if we do not hit it.

The past season has not been a very profitable one, as the unusual cold and great rainfall has retarded all vegetable growth, and therefore instead of having a well supplied table our good wife says she found it hard "to make out."

Raisin vegetables on high pine land for profit without irrigation is a good deal like a chance in the lottery, you may hit it, but it is oftener you will not, but with the means of watering when needed and with judicious fertilizing and proper management there is no end to what can be raised.

Thus as irrigation seems to be coupled with vegetable, a few remarks on the former may not be out of place. Our first irrigating plant consisted of an ordinary force pump and 100 feet of hose. With this we were enabled to water a small garden for our own use. The results were so satisfactory that we commenced to lay plans for a much larger plant. Knowing full well our pocket-book had a limit (the fate of all editors), we started on a great plan, but did not go far. We erected a wind-mill and tank, and put in the ground 400 feet of two-inch pipe, so that with our 100 feet of hose we could water a strip 600 feet long and 225 feet wide. (We found that a great deal of damage was done to the growing vegetables by the hose dragging over them, so we put 600 feet more of pipe in the ground, and now have it so arranged that with a 25 foot piece of hose we can water the whole.) The Fall of that year we planted a garden to supply our table abundantly, not thinking of market, as our family consisted of from eight to nine, all of whom were perfectly able to do justice to a good full meal, we, of course, planted land enough, as we supposed, to grow the amount required.

By means of this irrigating plant we were able to "bridge over" the dry spells and keep our vegetables growing right along, and the yield was such that besides furnishing all we could possibly consume and what we gave to our neighbors, we sold enough to pay for our help and about the premises and at the end of three months, when we exchanged accounts with our groceryman, he had the magnificent amount of $3 in his favor for groceries used during that time. Gentlemen, we lived the best and cheapest those three months that we ever lived. We have tried nearly all the different methods of applying water, and our experience is that the revolving sprinklers are far the best. We have indulged also in sub-irrigation, having put in two beds four feet wide and fifty feet long. The growth on these beds when taken care of, was simply wonderful. One-half of a bed was planted to a Mikado variety of tomatoes, and from that space of 5x20, we took over four bushels of tomatoes, one bunch of four weighing three and three-quarter pounds. The first cost of these beds will always prevent their general use. We have said so much on irrigation that we have been expecting the president to call us to order and remind us that vegetables was our subject.

We usually prepare our land in October for a Fall garden and plant in November such articles as are not injured by a light frost; such as peas, cabbage, radishes, turnips, parsley, carrots, beets, onions, etc. These can be planted in succession of every three weeks and thus the garden will be continually "coming on". When danger of frost is past we then put in our crops of cucumbers, squash, and such vegetables as do not appreciate a cool night.

In applying fertilizer we have received the best results by putting the first application in the drill, and afterward applying a quick-acting fertilizer, a little at a time but often, on the surface, and working it in, thus keeping the plants continually fed, and in a thrifty, growing condition. In transplanting such vegetables as tomatoes, egg plants, etc., in the Spring, we plant below the general level of the soil and leave the plant in ahollow or basin. Our reason for this is, in the first place, the roots being deeper they canstand the drought better, and when you irrigate or it rains what water falls within the basin goes to benefit the plant, while if it was planted on a mound as some do, the water would roll off and leave the roots of the plant dry and famishing.

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(Extracts from report of citrus committee, at Orlando, 1889, prepared and read by Mr. R. W. Pierce.)

Our State is not only large in territory, but great in its possibilities. I can but think if this one leading industry, the cultivation of the citrus fruit is intelligently and properly manipulated, that the future of the State of Florida is to be one of the grandest that ever the sun shone on, in wealth, beauty and prosperity. In looking over the countries that produce the citrus fruits, andstudying up their locations, soil and climate, I cannot but come to the conclusion that we can claim many advantages which they cannot. The advantages of our climate far surpass many others. While some can claim as good advantages in some res ects, they have many disadvantages which we have not. We do not have to irrigate at a great expense, as they do in many countires; nor do we have to build walls around our groves to protect them from the high winds, nor shelter to protect them

the cold, as is done in some countries. We should also have the advantages of our great home market, right at our own doors, an advantage that cannot be ignored by those countries which attempt to compete with us for the great American market. Nearness to market is always a great advantage, especially for perishable products.

Thus far we have had no serious insect pest to contend with, as some other countries have; nor disease affecting trees to any great extent, therefore, I claim that we have many natural advantages, which, if we properly develop, can but make us one of the richest States in the Union.

Now in order to accomplish this great result, there seems to me to be two great principal factors - first, the production of the fruit; second, the disposing of it at remunerative prices.

Now, as the productionof the fruit is first in order, I will proceed to give some ideas of how to grow the citrus trees, based on my own experience of thirteen years.

Now, while my experience has been quite extensive, I do not claim to know it all. There are many things I wish to learn. I do not think a man can have too much knowledge of any business he may be engaged in.

In making a grove the selection of land will be the first thing. There are many different opinions about the kind of land to select, whether high pine, hammock or flatwoods. There is per haps much to be said in favor of all these. My experience teaches that either will do, proveded it is well drained, although I have seen groves where the water was not at any time more than fifteen inches below the surface, that were good sized trees, and apparently in good condition, but this land had a slight natural drainage,so that the water kept in motion. Had it become stagnant they would not have long survived. However, I have seen natural wild groves of sour trees that were standing in stagnant water, and had been so for some time, that were looking finely and contained good crops of fruit. The trees, however, died out when the undergrowth and large trees were cleared away. My own grove is located on high "black jack" land, probably eighty feet to water, and clay nowhere less than twenty-feet from the surface, the very kind of land that most people would warn you against. My nurseries have

stood the drought much better than most groves on much lower land. I have no reason to complain of my success; I might possibly have done better had I had better land, yet might not have done so well if I had waited for the land to make the grove instead of going to work and making it myself. I am satisfied that I could have done very much better on the same location could I have started with my present experience. Therefore I would say, choose any location that suits you or that your means will allow. If you can get good, strong land of course it would be preferable, but remember this one thing--however good your land may be, you cannot expect to be successful if you take something from the land all the time and put nothing back. Land selected and prepared, the next thing in order will be trees; and here let me give you a little advice. Select only the very best trees, and the best varieties. The matter of a few dollars in the price of what trees you want amounts to nothing.

Remember if the planting is properly done, you are planting trees for generations yet unborn, as the orange tree under favorable circumstances lives to a very great age. "There is an orange tree in the convent of Santa Sabina, at Rose, which is known to be six hundred and eighty years old." "The orange groves planted by the Moors at Cordova, in Spain still exist, objects of great beauty and of much interest to travelers." "In the Moorish palace ofAlcazara there is an orange tree known to be upward of six hundred years old." So you see by this the importance of planting only the best, and future generations will bless you. The next question arises, which shall we plant, seedlings or budded trees? I answer most emphatically, budded trees, and I think that I but voice the sentiment of eight-tenths of the orange growers of Florida, and all the leading pomologist of the State.

In looking up the history and culture in all the countries that lay claim to giving it any attention, I find that budding is universally practiced. Why should we not bud our orange and lemon trees, when we wish to propagate a fine variety, as we do our grapes, apples, pears, plums, peaches and apricots? Some say that they deteriorate by so much budding. I would ask all such if they have done so in the older countries, where budding has been practiced for hundreds

of years? History does not show it to be the case. I cannot find in any country where it is practiced, that the trees have in any way lost their vitality. On the other hand, it is claimed by most writers in these countries, that trees budded on sour, bitter sweet, and some kinds of lemon stocks, are very much longer lives. If we bud, we get a duplicate of what we bud. The bud is a part of the original, while the seedling is a distinct individual, which may partake largely of the parent, or, be entirely unlike it. We are never certain whether we are going to have something as good as the original, better, or very much inferior. The budded tree will bear very much sooner, giving paying crops long before the seedling comes into bearing.

Having decided this matter, the next question will be, what varieties shall we plant? There is at present a great confusion of opinion in this matter. There are a great many very choice varieties, all having champions. Mr. Mott will tell you you should only plant the "Bidwell strain" of peaches, while Mr. Taber will recommend others as being equally as good, or better and Mr. DePass will say, some of his varieties surpass all others. The same conflict of opinions exist, with regard to the different varieti s of the citrus fruits. It would not take me long to decide in my own mind which I would prefer as far as appearance and flavor goes. As for me the Navel, Jaffa, Majorca, and several varieties of the blood, come the nearest to perfection, and have scored high in the decision of the judges at most of our horticultural fairs. Still, I am not prepared to say that these varieties will be the most profitable for general culture. It may be with the citrus fruits, as with apples, pears, peaches, and other fruits, the very choicest are not always the most profitable, as they may not be as vigorous, and productive, nor ship well. Time will determine this matter in the near future, and only a few of the most profitable varieties will be grown except by some fruit fanciers as varieties. The varieties of lemons most generally grown here, are the Villa Franca, the Belair Premium (imported by General Sanford), and the Eureka, which was first imported into California. Each of the three have their champions. Mr. President, I think this society, and not only this society, but the whole State of Florida, should extend a vote of thanks to Gen. H. S. Sanford and Charles Amory for the introduction and dissemina-

tion of many of our choice varieties of citrus fruits. The Tahiti lime is generally conceded to be the best. There are several varieties of Pomelo or grape fruit which have their champions.

In regard to "scale," I would say that for the past six years I have paid but little attnetion to them. In fact, have done no spraying of any kind and have less scale than when I was was washing all the time. I believe with proper fertilizer to keep the trees in healthy condition that the scale should give us no trouble. However, for those who think they must was I would refer them to Mr. C. H. Hubbard's valuable work on insects, page 667.

Mr. President, it seems to me that there is great discrimination on the part of our government to give our market to foreign countries, to people who do nothing to support our government, are not interested in common with us, in our institutions, our homes, and general prosperity. In view of these facts the question arises, does it pay to be an American citizen? Mr. President, it would seem to me that Americans living in this county, who have to pay taxes here, to support the government, in all its branches, having their families here, their children to educate, spend alltheir money here, and would be called upon to defend it in time of war, should have the first privilege of our market.

I may be selfish, but I believe it is my duty as a good citizen to look after the interest and welfare of my family, before I do some other man's family. I think what is true of an individual, is also true of a nation.

I m preparing other fruit for market, it should be done in a careful manner, making it as attractive as possible, as well packed fruit always has the preference, even at higher prices. I have sent a list of inquiry to the leading fruit dealers in the country. The question which, in their opinion, give the best prices, the auction sale, or thecommission men. All agree that the best prices would be realised through honest commission men.

Their advice is to select one good house in each city, and ship only to that house. My own observation has led me to the same conclusion. When there is plenty of fruit to be sold at auction, the tendency is to combine among the buyers, and one or two

men buy the lot at their own price and then divide and in that way control the market. I am pleased to see an increased tendency of the buyers to buy the fruit on the trees, or at certain prices on board cars. I think this practice should be encouraged, as I believe it is the proper way to do, then every many that handles our fruit, is interested to the extent of the value of the fruit, as well as the commission. Now, Mr. President, in conclusion let me urge every one interested in horticulture in the State, that we, asking the co-operation of our sister States, interested with us, unite in one great effort that shall shake the government ot its very foundation, if necessary, to secure the first privilege of American markets to American producers, which must of necessity include cheap and better transportation facilities. I think no one will deny, that if we had this $5,500,000 that ~~xx~~ went to foreign countries for citrus fruits, together with millions more for vegetables, to distribute among our own people, it would have created one of the greatest eras of prosperity that ever dawned upon our State. It would have lifted us up above the shadows through we have been passing for the last few years, up into God's own glorious sunlight of prosperity, which would take years of yellow fever and calamity to dim.

Brothers, do not be discouraged, but press onward and upward toward the acme of horticulture, for I believe that our great peninsular, extending out into sea some four hundred miles, whose brow is kissed by the gentle zephyrs laden with the perfume of orange blossoms, as it sports from shore to shore, producing a climate which cannot be surpassed, if equalled, on the globe, is destined to be recognized as the paradise of the world.

Mr. President, we have the climate for the citrus fruits, together with many others. The climate for the poor man, for the rich man; and the invalid can bask in our glorious sunshine and breathe God's pure unadulterated, health-giving air. I believe the wealth and intelligence of the United States will see the many advantages of our climate for the cultivatio of citrus fruits, and our waste places will be made to blossom as the rose. I believe the American people will give us the protection we desire, and facilities, and necessary reductions of rates. Then shall Florida's praises be sung, and her oranges eaten by all men. R. W. PIERCE.

(Selected from the paper prepared by W. S. Hart, of the citrus committee, and read at the Orlando meeting, May, 1889)

It may be well to mention that previous to the great freeze of 1834, so destructive to the orange growing interests of this State at that time, there were but few citrus fruits grown along the Atlantic coast counties outside of St. Augustine, where there were several quite extensive groves, and along the lower St. Johns. Between that time and the Rebellion there was quite a number of orange groves planted further South among which were those of C. C. Sutton and Jas. Vass, of Port Orange, the latter grove having been set by a Mr. Marshall. B.C. Pacettie's grove near Mosquito Inslet, those of the Sheldon Brothers, John and Arad; E. K. Loud and Capt. Dummitt along the Hillsborough river and Lagoon, the Estes grove on Turkey creek and Judge Herman's twelve miles below Capron on Indian river.

Of the soils best suited to the oranges however, in my opinion there is no equal to the high grade hammock. On this land the trees grow rapidly, remain healthy and bear fruit abundantly for several years, if properly cultivated, without other food supply than is in the soil and natural upon the land. The fruit has the fine quality of juiciness and flavor of the low hammock land oranges, with a thicker rind and firmer texture that causes them to stand shipping like the pine land product. Liberal fertilizing required after awhile upon these as upon all other lands, but not before the crops already produced have given a satisfactory income with which to purchase it, and the encouragement so thoroughly appreciated at this state of the orange growers' experience. These lands are underlaid with yellow sand, coquina sometimes being found at quite a depth from the surface near Rock Ledge. They need no draining, and in this part of the State can be easily and cheaply irrigated if though desirable by artesian wells. Along the banks of our rivers such lands are sometimes covered with thick beds of oyster shells, which make the ground hard to work, and as a rule the trees are not as healthy or long-lived as where these are absent. The shells, however, when burned to lime make an excellent application to apply to groves when there is a good supply of humus in the ground.

FERTILIZERS.

Any of the above classes of lands will grow thrifty trees and produce several heavy crops of fine fruits before showing the need of fertilizers, but this fact has caused many grove owners of this coast to delay so long before giving the needed help as to stint the growth of the tree and in some cases even starve to the extent of becoming worthless.

On the high, naturally poor pine lands of the interior where the trees are liberally fertilized from the beginning, may be found some of the finest looking groves of the State and, judging by the reports, that we get from their owners, they may be made quite profitable, notwithstanding the fruit is apt to becoarse skinned and rusty.

Groves on any quantity of pine or hammock lands require fertilizing sooner or later, as no land is strong enough in all the elements of plant food to sustain the tree in a healthy, vigorous and fruitful condition indefinitely.

This fact established it would seem the part of sound judgment and true economy to commence the application before the trees seriously feel the lack of food, for underfed trees are not only unprofitable for the time being, but, as when the life of any living thing is threatened, its tendency is towards reporduction, they will produce fruit at the expense of the vitality of the tree, and very soon become an easy prey to frost, disease or insect enemies if false economy is practiced in this direction.

PREPARING THE LAND.

In preparing low, heavy hammock for an orange grove mainly, simply dig up the ground where the trees are so set, into low mounds; then fell the trees and let the larger ones lay where they fall for several years. After the orange trees are set they work about them with a hoe, enlarging the circle of prepared ground each year, until all is gone over. In the meantime the weeds are cut occasionally with a bush scythe, and is all the the cultivation the grove gets until most of the natural growth has rotted and gone back to the ground. Groves certainly do well on such land under this treatment, and possibly it is asgood as any; at least it is not as expensive as some other methods. The writer, is clearing his gray hammock land, cleans it up thoroughly, piling the logs and brush to one side to rot for

fertilizer, plows it and cross plows it several times over, and plants a crop of cow-peas to turn under before setting the trees, and he is content with the outcome. The methods in practice range all the way between these two.

CULTURE.

Many are the theories as to the mode of culture best adapted to the orange and lemon tree, and strong advocates ready to give good reasons why their plan is best may be found for all of them, but the one most generally adopted in this section is to keep the ground clean and mellow from the time when the danger of injurious frosts is past until about the middle of May, and then either have some crop coming on that will shade the ground and bring/to the surface fertilizing elements that have gone below the feeding roots of the orange--such as cow-peas castor-beans, beggar-weed, etc.,--or else let the weeds and crab-grass grow. As this grass makes good hay it is usually cut and fed to stock and then returned to the grove, or it is raked up to the trees in February, to save as a mulch until it rots down and is turned into the soil again, thereby adding the much need humus.

In lieu of growing crops on the ground some coat the whole surface with leaves from the hammock or palmetto scrub, or with rushes from the salt marshes. This treatment gives satisfactory results, especially the hard-wood leaves, which are a natural and perfect fertilizer as well as a good mulch for citrus trees. Clean culture at all times is practiced by trees make a thrifty growth for the first two or three years. It is generally conceded, however, that to leave the ground bare to the direct rays of the sun for the year round is very detrimental to it, besides leaving much of the ground idle when it might be growing crops that would be of value to the trees as fertilizer later on.

INSECT ENEMIES.

The matter of first importance to the fruit grower is to produce strong growing, healthy and productive trees that yeild fine flavored, handsome fruit and hold it until fully matured and the market is right to receive it. Although the orange tree has strong resistant and recuperative powers, it cannot always be kept up to this standard, even under the best of surroundings, but set as they are in all soils and under all conditions they often present a sorry appearance to their owner, notwithstanding he has taken every precaution known to him to ward off disease and insect enemies. Of the

latter the scale, of several varieties, and the rust mite are the most important to consider, for although the citrus family has several other enemies, except in rare cases, they give comparatively little trouble and require little effort on the part of the grower to prevent serious damage. Many preparations of oils, soap, sulphur, potash, etc., have been concocted and offered the public as certain exterminators of the scale, and as more or less of this insect is to be found in every grove in America, some of them have found ready sale and proven quite profitable to the seller, at least. I am satisfied, however, that there is no better emulsion in use for this class of insects than that given to the public by Prof. H. G. Hubbard, through the report of the Division of Entomology of the United States Department of Agriculture. And, before giving the formula, I would like to recommend this report of Prof. Hubbard to those interested in insects affecting the orange as the most complete and satisfactory work of the kind I have yet seen. If the edition is not exhausted, they can be obtained by addressing your Congressman, or the head of the Department at Washington. The formula is as follows:

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| Kerosene oil, 2 gals. | | 67 per cent. |
| Common soap or whale oil soap | 1/2 lb. | 33 per cent. |
| Water | 1 gallon | |

Heat the solution of soap and add it boiling hot to the kerosene. Churn the mixture by means of a force pump and spray nozzle for five or ten minutes. The emulsion, if perfect, forms a cream, which thickens on cooling, and should adhere without oiliness to the surface of glass. Dilute before using, one part of the emulsion to nine parts of cold water.

The above mixture is inexpensive, costing in the diluted form about 1½ cents per gallon, and if used faithfully two or three times during the hatching seasons, will rid the trees from the scale for the time being, but in most cases it must be used every little while thereafter or the insect will return just as the tree is recovering from the first attack, and soon it is as bad, or worse, than ever. The writer considers th let-alone policy the best, as where infested trees, on congenial soils, are left to themselves the enemies of the scale rapidly develop and usually by the end of the second season gain the ascendency. The trees are

cleaned up and as the enemies are there and on adjoining trees to take any stray scale that may hatch, the grove remains clean for years. Having plenty of good roots the trees soon make a fine, thrifty growth and catch up in a remarkably short time with the surrounding trees that have escaped the pest. Nor is this mere theory, as it has been in practice for several years with very satisfactory results. I neither scrub, spray or prune the trees until the scale has been destroyed; then I simply cut away the dead and devitalized wood and my grove is done with that pest for years to come.

I believe that scrubbing of orange trees with a strong solution of soap, as a rule, does more harm than good and should be abandoned. If a tree is set in uncongenial soil, no treatment that its owner can afford to give it will save it from its enemies, so it had best be dug up as soon as the fact becomes apparent, and moved to a better location.

MAL-DE Goma.- Although this disease has existed for many years and done great damage in the orange and lemon groves of Europe, it seems to be little understood by most orange growers throughout the State. Having several trees affected with it in a pine land grove of mine, and considering it likely to be a very serious drawback to the culture of several kinds of acid fruits, I have taken considerable pains to learn what I could of it. In Europe it seems to be the chief enemy of the citrus fruit culturists, and every known drug at all likely to affect it, seems to have been tried for its cure. Governments have offered large rewards to anyone who will find a sure remedy, and yet it is asserted that "nothing of any value has yet been found, either with regard to the cause of the disease or the remedy for it."

For a description of the disease as it is known in Florida, and its supposed causes, as well as preventions and cure, I refer you to the report of Prof. A. H. Curtis, in Bulletin No. 2 of the Florida Experimental Station: also published in the Farmer and Fruit Grower of August 1888. This report gives us more encouragement thanthe above quotation would lead us to expect, and as Mr. Bevan, of St. Augustine, was therein spoken of as having been successful in curing it, I wrote to him for his method and got the following reply:

W.S. Hart:

Dear Sir: Yours of the 15th received. My cure for the foot-rot is so simple and easy to do that I cannot make a long story out of it. First remove all of the top earth from the base of the tree and for about two and one-half feet all around, leaving the large roots entirely exposed; taking the earth away from under the roots as well as on top of them; then I get a carboy of sulphurous acid and mix with equal parts of water and wash the base and roots with the mixture, using a whitewash brush. Then I take flower of sulphur and sprinkle on the roots and base, and on the ground where the top earth has been taken away. This should be done twice a year, Spring and Fall, for two years, and after that the sulphur only used once a year. The earth that has been taken away should never be put back, but the roots should be left exposed always, as the tree will do a great deal better.

I lost a good many trees before I commenced to use the acid and sulphur, but none since, and I have effected some wonderful cures of trees that were almost dead. I have been using the acid and sulphur for nearly five years. Trees budded on the sour never have the foot-rot, it's only the good-for-nothing seedlings that we have trouble with. C. M. Bevin.

Many have claimed to cure it, but as it is intermittent -- apparently being cured at times and healing all around the sores, then in several months, or a year or two years later, coming out again to repeat the process until the tree is entirely girdled and killed-- I fear that many of them have mistaken the natural cessation of the disease for a cure, when their preparations may have had no effect upon it whatever.

In the above cites case, however, there seems to have been radical cures effected, and I would suggest that further tests of this remedy be made, and especially so, as it seems to be the one most highly recommended in those districts of other countries where this disease has been longest known.

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(Report of Mr. A. L. Duncan of the citrus committee, read at Interlachen).

Mr. President, and Members of the Florida Horticltural Society:

We hafe used for stocks, the scur, bitter sweet and sweet orange, the Florida rough lemon, and the grape fruit. The first and second appear to be equally good, though some have the opinion that the second has the most vigor of the trees, they are to be preferred to all other on account of their (immunity) from that much dreaded disease, foot-rot. It is claimed that they will not do well in the lighter soils in the State, but it is a question whether it will pay at all to plant where the scur stock will not thrive under proper care and with a reasonable amount of fertilizer. The sweet stock has thus far, I believe, been free from foot-rot in California and Louisiana, but there is more or less risk in planting it in any part of Florida. The rough lemon has been thought not liable to foot-rot though I have inquired into the matter during the past six years havenot found or heard of a tree affected by this disease until the present Spring. In a grove of sweet seedlings and younger budded trees on sweet stock, that have nearly all succumbed, there were two rough lemons, one is dead and the other nearly so. In the same grove are two seedling grape-fruit trees both uninjured; notwithstanding this, the rough lemon is much to be preferred for the lighter soils of South Florida, and I would not hesitate to plant it in any well drained soil, suitable for citrus fruit culture. Buds on this stock in our own and neighboring groves are more thrifty, hold their fruit better and are less affected by drought than any others. The grape-fruit stock makes a magnificent headed tree, and the fruit is of an exceptionally fine quality or at least I have so found it in three different groves where some of the buds are about thirty years old. In one of these groves there are thirty old buds in rough lemon stocks and none of them affected by foot-rot, though many of the sweet seedlings about them have died of that disease. On the western side of the entrance to Safety Harbor in Hillsboro county, lies what is known as the Phillippi Hammock. It is a spot of rare natural beauty and in places it must be thirty to fifty feet above tide water. On nearly the highest part, which is a rich shell soil; Dr. Phillippi fifty years ago planted seed which came from Cuba. After the war

the place was neglected to a considerable extent and the orange trees are now dead or dying, while the grape-fruit trees are in a thrifty condition, bearing annually large crops of very excellent fruit. It would therefore appear that the grape-fruit can safely be planted in shell lands where the sweet orange, under certain conditions, is comparatively short lived. The results of our treatment of a part of our old grove during the past year has been quite interesting to us, and though a notice of it may appear as an infringement on the work of the common fertilizers, it is not so intended. These trees suffered last Fall, Winter and Spring a year ago, from dry weahter, rust mite, and red spider, they had been well fertilized in December, but no rain falling, it had no effect, the trees about the old house looked well as usual. When at Ocala in February, I consulted Rev. Lyman Phelps as to how best to manage stable manure to keep it from heating. He answered he applied it before it had time to heat and so had no trouble. Upon my return we hauled out what we had and spread it about the poorest looking old trees in the grove and none has been allowed to accumulate since that time. Soon after summer rains began, these old trees commenced to improve and in a short time excelled in appearance, those about the old house and they have kept on improving, and are now the finest looking trees on the place, though the others had an extra application of commercial fertilizer late in the summer to keep them from getting too far behind. We have used stable manure on backward trees of all ages and with the same marked benefit. A. L. DUNCAN.

( At Interlachen, 1891, the report of the vegetable committee was read by Mr. H. O. Painter, as follows:)

So we concluded to make a trip to the sub-irrigated farms of Mr. Hastings and Mr. White in St. Johns county, and report to your honorable body what we saw, and with your indulgence we will try to give you an idea of what these gentlemen are actually doing.

Arriving at Mr. Hastings we found him busy surveying a forty-acre tract to extend his garden and rice fields.

Last August the place now known as "Hastings" was only flat woods and indeed they are flat woods. It would be hard to find as many acres in one body anywhere

in the State so nearly on the same level, to all appearance to the eye, yet with a gradual slope so that perfect drainage can be had by ditching.

The soil is similar to other flat woods, with hardpan from one to three feet below, with considerable prairie land intermixed, which after draining needs only a plow to break it up to render it ready for cultivation.

As before stated, last August, Hastings was not, but soon after he put in an appearance, and judging from what he has accomplished we should say a good deal of Hastings has been done.

He built his house and barns among the pines and used the prairie land for his garden, and as we walk around the premises and see the tomato plants loaded with fruit, some growing, too, on a land that had never felt a plow; cucumber vines that are about through bearing, yet still can boast of "cukes" over two feet in length, cabbage in huge piles that is being fed to "razor backs" instead of being shipped to fill the coffers of the railroads and commission merchants, we can't help but wonder, how did he do it all.

We soon discoveredthe great factor of it all in a four-inch artesian well. This well is but 250 feet deept, yet the volume that arises is enormous and with such force that no pumps are needed to elevate the water to any part of the house or barn. The temperature of the water remains at about the same--79 degrees-- the year around, which is a great advantage in gardening during the winter season.

Close to the well the "cuke" house is built, being 156 x 22, containing four beds which run the whole length. This house is covered with glass and built similar to greenhouses North only that it does not have to be so strongly protected against cold and has no steam heating apparatus. The heating of this house during cold spells that occur during December, January and February is quite novel as well as original, and we venture the assertion that nowhere in the world is it done the samy way. When the "signs" indicate that a cold night is approaching, the well is opened and the stream of water is conducted to the "cuke" house where it flows under the beds in a stream from three to six inches deep. This current of water keeps the temperature at an average of 60 degrees on cold nights, frequnetly making a difference of from 20 to 30 degrees between inside and outside.

Thus the "cukes" are kept from the harm of Jack Frost and allowed to grow until they are served up to our winter visitors who can afford to pay $ 5 per day and upwards, at a mixmum cost, with very little trouble. The varieties of cucumbers grown are "Telegraph," "Duke of Edinburgh" and "Lord Kenyon's Favorite." These are English varieties and are especially adapted to forcing in hot-houses. "Nichols Medium Green" and "White Spines" are also used, and while they grow splendidly and produce abundantly, they do not give the satisfaction that the first named kinds do, owing principally to their size. Mr. Hastings informed us that he sold almost his entire crop at $6 per dozen and could have disposed of three times as many as he raised at the same price and at the same place. As fast as the vines show that they are running out they are taken up and cantaloupes planted in their stead, and as he has some very choice and large varieties, Mr. Hastings is expecting to reap the cream of the market with them. The vines are looking healthy and have already begun to climb the wires placed there for the purpose. From this you can form your own ideas of what could be done in the greenhouse line with the mother earth to furnish you with heat and moisture at the same time.

From the greenhouse we visited the tomato frames of which there are several kinds, and found them all doing well, the vines having a healthy look and hanging full of fruit. The majority, and best tomato frames, are built about five feet high to the north, and slope to the south. Waterproof fibre cloth is used for covering which is let down or rather rolled down over the plants at night. In this manner the tomatoes have been carried through eighteen frosts without injury and havebeen bearing all the time, giving Mr. H astings a chance to get a lot to market and secure $4 per crate of sixteen quarts. These tomatoes were planted in trenches dug through the wire grass and the fertilizer applied in the trenches. When it became necessary to water the plants a ditch was dug around the frame that connected with the trenches in which the plants were set, a stream of water from the well was turned into

the ditch and in a few minutes the whole was thoroughly saturated. There are bushels and bushels of tomatoes yet to ripen, showing that under that treatment they thrive better than in the open field and live and produce a great deal longer.

From the tomato sheds we visited the prairie garden of some thirty acres where a crop of cabbage had been harvested and Irish potatoes dug.

Here we saw the finest potatoes that we have ever seen growing in the State. Large size, smooth skin and thoroughly ripe. All this was done with the aid of irrigation, the artesian well furnishing the supply, although nearly half a mile off. Irrigation is done by means of ditches dug along one side of the field. When a certain pice of land is needing water, the trenches on both sides of it are dammed up and the water is allowed to fill the intervening trenches till level with the surface, and is then dammed in and left to percolate through the soil which it will do in a very short time.

We have reserved to the last, one grand feature of the irrigated land and one which will, we believe, ere long, bring many a dollar to our borders. This is raising rice. After vegetables are all harvested and the land can be kept in continued use the year around. All that can be done on this land remains yet to be proven, for the work that has been done on this land is only a beginning, for it would be impossible for any one or two men to develop it in so short a time. Mr. Hastings has started the ball rolling and others can join in pushing it along.

About two miles from Mr. Hastings, Mr. U. J. White has a farm on a more extensive plan, especially his rice fields. We found Mr. White busy shipping cabbages from his forty-acre patch, and trying to figure out how much he would make at $17 net, per car-load. Here is a text for the transportation committee and we hope they will make the most of it. Mr. White has but recently finished fencing some 4,000 acres of land near the centre of which is a large prairie of 400 acres nearly all of which is now covered with a crop of rice just coming up. This land three months ago was in its virgin state and over which the herds of cattle roamed unmolested and unattended. Right through the centre of this large tract of land a

canal is cut which is about three miles long. Into this canal the water from three artesian wells is turned and from here it is carried to all parts of the rice field. Here one can see a rice bed one and one-fourth miles in length, with water flowing at every forty feet, that is, whenever it is needed. Last year on some tiral beds of rice, Mr. White gathered nearly 100 bushels to the acre, and the product was pronounced as fine as any from Louisiana or South Carolina. Some South Carolina planters have become greatly interested in it and we should notbe surprised to hear that ere another year rolls around a number of them will invest in this heretofore despised "flatwoods land." Shoudl any of the members feel like visiting Mr. Hastings we will say that they will receive a hearty welcome from both Mr. Hastings and his good wife, and the stay will be made both pleasant and profitable, for Mr. Hastings has no secrets and shows a true spirit of manhood in that he is willing that others should profit by his experience and steer clear of the snares on which he has failed.

In conclusion we would state t at Mr. Hastings informs us that he is making arrangements with a German to make into sauerkraut all the cabbage that is not shipped another season, also may start a tomato canning factory if the outlook warrants."